Limited Test report

463869-7TRFWL

Date of issue: August 10, 2022

Applicant:
Foresight Sports

Product:
Radio Module

Model:
PAN9028 (8987)

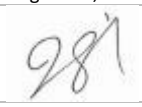
FCC ID: 2A6QA-JODYW263FSS IC ID: 28505-JODYW263FSS

Specifications:

- FCC 47 CFR Part 15, Subpart C – §15.407
  General technical requirements
- Industry Canada RSS-247, Issue 2
  Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Lab and test locations

Company name	Nemko USA Inc.
Address	2210 Faraday Ave, Suite 150
City	Carlsbad
State	California
Postal code	92008
Country	USA
Telephone	+1 760 444 3500
Website	www.nemko.com
FCC Site Number	Test Firm Registration Number: 392943 Designation Number: US5058
ISED Test Site	2040B-3

Tested by	Lan Sayasane, EMC Test Engineer
Reviewed by	James Cunningham, EMC/MIL/WL Supervisor
Review date	August 10, 2022
Reviewer signature	

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.
This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Copyright notification

Table of Contents

Section 1 Report summary

1.1 Applicant

Company name	Foresight Sports
Address	9955 Black Mountain Road
City	San Diego
State	CA
Postal/Zip code	92126
Country	USA

1.2 Manufacturer

Company name	Foresight Sports
Address	9955 Black Mountain Road
City	San Diego
State	CA
Postal/Zip code	92126
Country	USA

1.3 Test specifications

FCC 47 CFR Part 15, Subpart C – §15.407	General technical requirements
IC RSS-247 Issue 2	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

1.4 Test methods

ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
558074 D01 DTS Measurement Guidance v03r02 (June 5, 2014)	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

1.5 Exclusions

Testing includes limited transmitter power calculations, radiated spurious measurements, restricted band edge measurements, and undesirable emission measurements.

1.6 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard except as noted in section 1.5 above. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See "Summary of test results" for full details.

1.7 Test report revision history

Table 1.7-1: *Test report revision history*

Revision #	Details of changes made to test report
463869-7TRFWL	Original report issued
Notes:	None

Section 2 Summary of test results

2.1 FCC Part 15 Subpart C, general requirements

Part	Test description	Verdict
§15.207(a)	Conducted limits	Not tested
§15.31(e)	Variation of power source	Not tested
§15.203	Antenna requirement	Not tested

Notes: EUT is AC powered
The antenna is located within the protective cover of EUT on PCB

2.2 FCC Part 15.407

Part	Test description	Verdict
§15.407(a)	Power limits	Pass
§15.407(b)	Undesirable emission limits	Pass
§15.407(c)	Automatic transmission termination	Not tested
§15.407(d)	Operational restrictions for 6 GHz U-NII devices	Not applicable
§15.407(e)	Minimum 6 dB bandwidth	Not tested
§15.407(f)	Radio frequency radiation exposure requirements	Not tested
§15.407(g)	U-NII devices frequency stability	Not tested
§15.407(h)	Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS)	Not tested
§15.407(i)	Operational Modes	Not tested
§15.407(j)	Operator Filing Requirement	Not tested
§15.407(k)	Automated frequency coordination (AFC) system	Not applicable
§15.407(l)	Incumbent Protection by AFC system: Fixed Microwave Services	Not applicable
§15.407(m)	Incumbent Protection by AFC system: Radio Astronomy Services	Not applicable
§15.407(n)	Incumbent Protection by AFC system: Fixed-Satellite Services	Not applicable

2.3 IC RSS-247, Issue 2

Part	Test description	Verdict
6.2	Power and unwanted emission limits	Pass
6.3	Dynamic frequency selection for devices operating in the bands 5250-5350 MHz, 5470-5600 MHz, and 5650-5725 MHz	Not tested
6.4	Additional requirements	Not tested

2.4 IC RSS-GEN, Issue 5

Part	Test description	Verdict
7.3	Receiver radiated emission limits	Not applicable
7.4	Receiver conducted emission limits	Not applicable
8.8	Power Line Conducted Emissions Limits for License-Exempt Radio Apparatus	Not tested

2.5 Scope of limited testing

The EUT supports the following wireless technologies:

- IEEE 802.11a: 20 MHz bandwidth
- IEEE 802.11n: 20 and 40 MHz bandwidths
- IEEE 802.11ac: 20, 40 and 80 MHz bandwidths

The EUT supports the following frequency bands:

- U-NII-1: 5150-5250 MHz
- U-NII-2A: 5250-5350 MHz
- U-NII-2C: 5470-5725 MHz
- U-NII-3: 5725-5850 MHz

The following table summarizes the scope of the limited testing performed:

Clause	Tests
§15.407(a) power limits	Calculation only
§15.407(b) restricted band edge emissions	IEEE 802.11a, U-NII-1, Low band edge IEEE 802.11a, U-NII-2A, High band edge IEEE 802.11a, U-NII-2C, Low band edge
§15.407(b) unwanted emissions, 30 – 1000 MHz	IEEE 802.11a, Channel 36 (5200 MHz) IEEE 802.11n 20 MHz bandwidth, Channel 36 (5200 MHz) IEEE 802.11n 40 MHz bandwidth, Channel 149 (5745 MHz) IEEE 802.11ac 20 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 40 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 80 MHz bandwidth Channel 144 (5720 MHz)
§15.407(b) unwanted emissions, 1 – 6 GHz	IEEE 802.11a, Channel 36 (5200 MHz) IEEE 802.11n 20 MHz bandwidth, Channel 36 (5200 MHz) IEEE 802.11n 40 MHz bandwidth, Channel 149 (5745 MHz) IEEE 802.11ac 20 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 40 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 80 MHz bandwidth Channel 144 (5720 MHz)
§15.407(b) unwanted emissions, 6 – 18 GHz	IEEE 802.11a, Channel 40 (5200 MHz) IEEE 802.11n 20 MHz bandwidth, Channel 40 (5200 MHz) IEEE 802.11n 40 MHz bandwidth, Channel 149 (5745 MHz) IEEE 802.11ac 20 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 40 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 80 MHz bandwidth Channel 142 (5710 MHz)
§15.407(b) unwanted emissions, 18 – 26 GHz	IEEE 802.11a, Channel 40 (5200 MHz) IEEE 802.11n 20 MHz bandwidth, Channel 40 (5200 MHz) IEEE 802.11n 40 MHz bandwidth, Channel 149 (5745 MHz) IEEE 802.11ac 20 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 40 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 80 MHz bandwidth Channel 144 (5720 MHz)
§15.407(b) unwanted emissions, 26 – 40 GHz	IEEE 802.11a, Channel 40 (5200 MHz) IEEE 802.11n 20 MHz bandwidth, Channel 40 (5200 MHz) IEEE 802.11n 40 MHz bandwidth, Channel 149 (5745 MHz) IEEE 802.11ac 20 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 40 MHz bandwidth Channel 149 (5745 MHz) IEEE 802.11ac 80 MHz bandwidth Channel 144 (5720 MHz)

Section 3 Equipment under test (EUT) details

3.1 Sample information

Receipt date	May 2, 2022
Nemko sample ID number	NEx: 463869

3.2 EUT information

Product name	Radio Module
Model	PAN9028 (8987)
Serial number	N/A
Part number	N/A

3.3 Technical information

Frequency bands	U-NII-1: 5150-5250 MHz U-NII-2A: 5250-5350 MHz U-NII-2C: 5470-5725 MHz U-NII-3: 5725-5850 MHz
Minimum frequency (MHz)	5150 MHz
Maximum frequency (MHz)	5850 MHz
Type of modulation	802.11a, 802.11n, 802.11ac
Power requirements	16-24 V_{DC}; 1 A
Antenna information	5.1 dBi gain, PCB SMT Antenna

3.4 EUT exercise and monitoring details

EUT was tested in 802.11a/n/ac wireless network specifications, using SISO and MIMO antenna configurations as applicable, with both 20 MHz and 40 MHz channel bandwidths as applicable, on the low, mid, and high channels.

Table 3.4-1: *EUT sub assemblies*

Description	Brand name	Model/Part number	Serial number	Rev.
Radio Module	Foresight Sports	PAN9028 (8987)	--	--

Table 3.4-2: *EUT interface ports*

Description	Qty.
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Table 3.4-3: *Support equipment*

Description	Brand name	Model/Part number	Serial number	Rev.
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Table 3.4-4: *Inter-connection cables*

Cable description	From	To	Length (m)
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3.5 EUT setup diagram

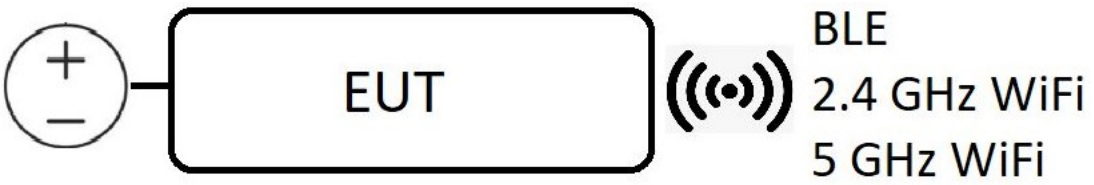


Figure 3.5-1: *Setup diagram*

Section 4 Engineering considerations

4.1 Modifications incorporated in the EUT

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5 Test conditions

5.1 Atmospheric conditions

Temperature	15-30 °C
Relative humidity	20-75 %
Air pressure	86–106 kPa

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.

Section 6 Measurement uncertainty

6.1 Uncertainty of measurement

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.

Test name	Measurement uncertainty, dB
Radiated spurious emissions	3.78
Powerline conducted emissions	1.38
All antenna port measurements	0.55
Conducted spurious emissions	1.13

Section 7 Test Equipment

Table 6.1-1: *Test Equipment List*

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
EMI Test Receiver	Rohde & Schwarz	ESU40	E1131	1 year	02-Mar-2023
System Controller	Sunol Sciences	SC 104V	E1191	NCR	NCR
Antenna, Bilog	Schaffner-Chase	CBL 6111D	1763	2 years	18-May-2022
Antenna, DRG Horn	ETS-Lindgren	3117-PA	E1139	2 years	19-Apr-2023
Filter, 2.4GHz	N/A	N/A	--	NCR	NCR
High pass filter	Wainwright Instruments	WHKX10-5850-6500	E1208	NCR	NCR

Notes: NCR - no calibration required

Table 6.1-2: *Test Software*

Manufacturer of Software	Details
Rohde & Schwarz	EMC 32 V10.60.15 (radiated emissions)

Notes: None

Section 8 Testing data

8.1 FCC 15.407(a) and RSS-247 Power Limits

8.1.1 Definition and limits

Title 47 → Chapter I → Subchapter A → Part 15 → Subpart E → §15.407(a)

RSS-247 → §6.2

8.1.2 Test summary

Verdict	Pass

8.1.3 Notes

No testing was performed. The EIRP was calculated on the basis of test data from the original test report on the "JODY-W2" WLAN and Bluetooth module, report reference MDE_UBLOX_2008_RADIO_02 (FCC ID: XPYJODYW263, IC: 8595A-JODYW263). EIRP was re-calculated from the original test data using the new manufacturer declared antenna gain.

Manufacturer declared antenna gain: 5.1 dBi.

8.1.4 Test data

Table 8.1-1: *Output power*

Operating Mode	Test Frequency (MHz)	Maximum Conducted Power (dBm)	FCC Conducted Limit (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	IC EIRP Limit (dBm)
IEEE 802.11a, 6 Mbps	5180	14.00	24	5.1	19.10	22.2
IEEE 802.11a, 6 Mbps	5200	14.00	24	5.1	19.10	22.2
IEEE 802.11a, 6 Mbps	5240	13.90	24	5.1	19.00	22.2
IEEE 802.11a, 6 Mbps	5260	14.10	24	5.1	19.20	29.2
IEEE 802.11a, 6 Mbps	5300	13.80	24	5.1	18.90	29.2
IEEE 802.11a, 6 Mbps	5320	13.90	24	5.1	19.00	29.2
IEEE 802.11a, 6 Mbps	5500	13.30	24	5.1	18.40	29.2
IEEE 802.11a, 6 Mbps	5580	13.20	24	5.1	18.30	29.2
IEEE 802.11a, 6 Mbps	5700	13.60	24	5.1	18.70	29.2
IEEE 802.11a, 6 Mbps	5745	14.90	30	5.1	20.00	36.0
IEEE 802.11a, 6 Mbps	5785	14.70	30	5.1	19.80	36.0
IEEE 802.11a, 6 Mbps	5825	14.50	30	5.1	19.60	36.0
IEEE 802.11n-HT20, MSC0	5180	14.20	24	5.1	19.30	22.2
IEEE 802.11n-HT20, MSC0	5200	14.10	24	5.1	19.20	22.2
IEEE 802.11n-HT20, MSC0	5240	14.10	24	5.1	19.20	22.2
IEEE 802.11n-HT20, MSC0	5260	14.30	24	5.1	19.40	29.2
IEEE 802.11n-HT20, MSC0	5300	14.10	24	5.1	19.20	29.2
IEEE 802.11n-HT20, MSC0	5320	14.20	24	5.1	19.30	29.2
IEEE 802.11n-HT20, MSC0	5500	13.50	24	5.1	18.60	29.2
IEEE 802.11n-HT20, MSC0	5580	13.40	24	5.1	18.50	29.2
IEEE 802.11n-HT20, MSC0	5700	13.90	30	5.1	19.00	29.2
IEEE 802.11n-HT20, MSC0	5745	15.10	30	5.1	20.20	36.0
IEEE 802.11n-HT20, MSC0	5785	14.90	30	5.1	20.00	36.0
IEEE 802.11n-HT20, MSC0	5825	14.80	30	5.1	19.90	36.0
IEEE 802.11n-HT40, MSC0	5190	13.80	24	5.1	18.90	23.0
IEEE 802.11n-HT40, MSC0	5230	13.70	24	5.1	18.80	23.0
IEEE 802.11n-HT40, MSC0	5270	14.10	24	5.1	19.20	30.0
IEEE 802.11n-HT40, MSC0	5310	13.80	24	5.1	18.90	30.0
IEEE 802.11n-HT40, MSC0	5510	13.20	24	5.1	18.30	30.0
IEEE 802.11n-HT40, MSC0	5550	13.00	24	5.1	18.10	30.0
IEEE 802.11n-HT40, MSC0	5670	13.60	24	5.1	18.70	30.0
IEEE 802.11n-HT40, MSC0	5755	14.80	30	5.1	19.90	36.0

Operating Mode	Test Frequency (MHz)	Maximum Conducted Power (dBm)	FCC Conducted Limit (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	IC EIRP Limit (dBm)
IEEE 802.11n-HT40, MSC0	5795	14.70	30	5.1	19.80	36.0
IEEE 802.11ac-VHT20, MSC0	5180	13.80	24	5.1	18.90	22.5
IEEE 802.11ac-VHT20, MSC0	5200	13.90	24	5.1	19.00	22.5
IEEE 802.11ac-VHT20, MSC0	5240	13.80	24	5.1	18.90	22.5
IEEE 802.11ac-VHT20, MSC0	5260	14.00	24	5.1	19.10	29.5
IEEE 802.11ac-VHT20, MSC0	5300	13.80	24	5.1	18.90	29.5
IEEE 802.11ac-VHT20, MSC0	5320	14.00	24	5.1	19.10	29.5
IEEE 802.11ac-VHT20, MSC0	5500	13.50	24	5.1	18.60	29.5
IEEE 802.11ac-VHT20, MSC0	5580	13.50	24	5.1	18.60	29.5
IEEE 802.11ac-VHT20, MSC0	5700	13.90	24	5.1	19.00	29.5
IEEE 802.11ac-VHT20, MSC0	5720	13.70	24	5.1	18.80	29.5
IEEE 802.11ac-VHT20, MSC0	5745	15.10	30	5.1	20.20	36.0
IEEE 802.11ac-VHT20, MSC0	5785	14.90	30	5.1	20.00	36.0
IEEE 802.11ac-VHT20, MSC0	5825	14.70	30	5.1	19.80	36.0
IEEE 802.11ac-VHT40, MSC0	5190	13.80	24	5.1	18.90	23.0
IEEE 802.11ac-VHT40, MSC0	5230	13.60	24	5.1	18.70	23.0
IEEE 802.11ac-VHT40, MSC0	5270	14.10	24	5.1	19.20	30.0
IEEE 802.11ac-VHT40, MSC0	5310	13.80	24	5.1	18.90	30.0
IEEE 802.11ac-VHT40, MSC0	5510	12.10	24	5.1	17.20	30.0
IEEE 802.11ac-VHT40, MSC0	5550	13.20	24	5.1	18.30	30.0
IEEE 802.11ac-VHT40, MSC0	5670	13.80	24	5.1	18.90	30.0
IEEE 802.11ac-VHT40, MSC0	5755	14.90	30	5.1	18.80	36.0
IEEE 802.11ac-VHT40, MSC0	5795	14.70	30	5.1	20.00	36.0
IEEE 802.11ac-VHT80, MSC0	5210	13.40	24	5.1	18.50	23.0
IEEE 802.11ac-VHT80, MSC0	5290	12.90	24	5.1	18.00	30.0
IEEE 802.11ac-VHT80, MSC0	5530	12.20	24	5.1	17.30	30.0
IEEE 802.11ac-VHT80, MSC0	5610	12.10	24	5.1	17.20	N/A
IEEE 802.11ac-VHT80, MSC0	5690	12.90	24	5.1	18.00	24.0
IEEE 802.11ac-VHT80, MSC0	5775	13.90	30	5.1	19.00	30.0

8.2 FCC 15.407(b) and RSS-247 5.5 Radiated restricted band-edges and spurious emission

8.2.1 Definition and limits

Title 47 → Chapter I → Subchapter A → Part 15 → Subpart E → §15.407(b)

RSS-247 → §5.5

Table 8.2-1: *FCC §15.209– Radiated emission limits*

Frequency, MHz	Field strength of emissions		Measurement distance, m
	µV/m	dBµV/m	
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.
For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

Table 8.2-2: *FCC restricted frequency bands*

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	Above 38.6
13.36–13.41			

8.2.2 Test summary

Verdict	Pass		
Test date	May 2, 2022	Temperature	22 °C
Test engineer	Lan Sayasane, EMC Test Engineer	Air pressure	1008 mbar
Test location	3m semi-anechoic chamber (Radiated)	Relative humidity	54 %

8.2.3 Notes

The EUT was configured to transmit continuously on the lowest, middle and highest channels.

The spectrum was search from 30 MHz to 26 GHz (above the 10th harmonic of the highest transmit frequency).

Radiated measurements were performed at a 3 m measurement distance.

8.2.4 Setup details

EUT setup configuration	Tabletop
Test facility	Nemko San Diego
Measurement details	Radiated spurious emissions measurement performed as per C63.10 §12.7

Receiver settings for radiated measurements within restricted bands below 1 GHz:

Resolution bandwidth	120 kHz
Video bandwidth	300 kHz
Detector mode	Peak (preview measurements) Quasi-Peak (final measurements)
Trace mode	Max Hold
Measurement time	5 s (final measurements)

Receiver settings for radiated measurements within restricted bands above 1 GHz:

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Detector mode	Average and peak (final measurements)
Trace mode	Max Hold
Measurement time	5 s (final measurements)

8.2.5 Test data

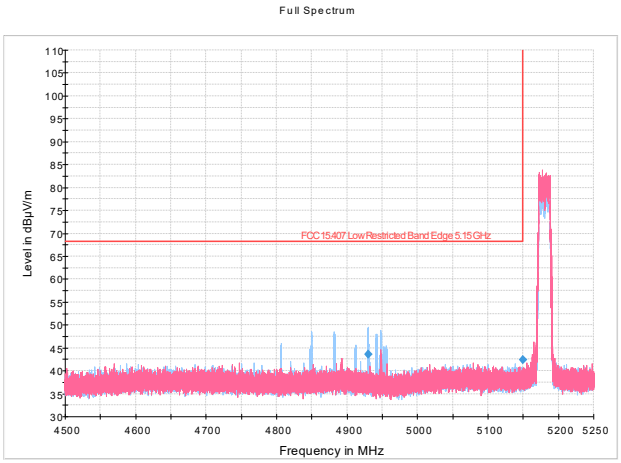


Figure 8.2-1: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-1 band, low channel*

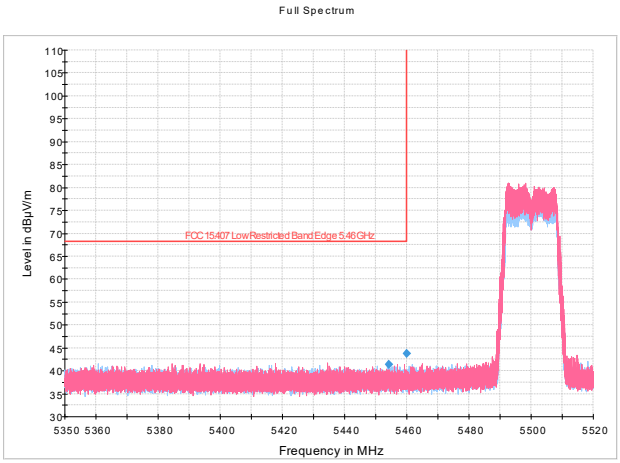


Figure 8.2-2: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-2C band, low channel*

Table 8.2-2: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-1 band, low channel*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4929.725000	43.53	---	68.20	24.67	5000.0	1000.000	250.0	V	290.0	-2.3
5150.000000	42.42	---	68.20	25.78	5000.0	1000.000	170.0	V	90.0	-2.4

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)

Table 8.2-3: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-2C band, low channel*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5454.346000	41.40	---	68.20	26.80	5000.0	1000.000	345.0	H	299.0	-2.2
5460.000000	43.69	---	68.20	24.51	5000.0	1000.000	107.0	H	0.0	-2.3

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)

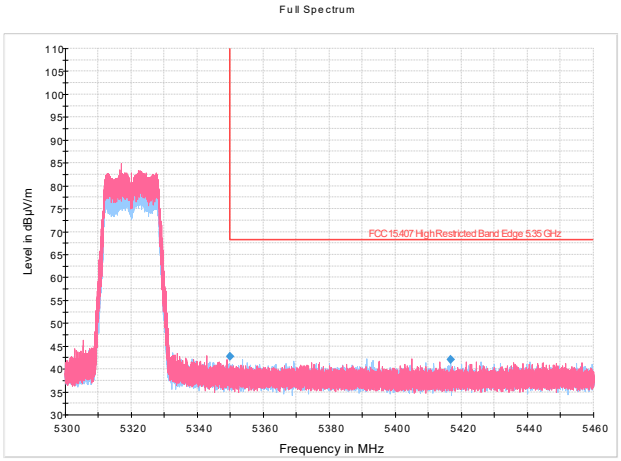
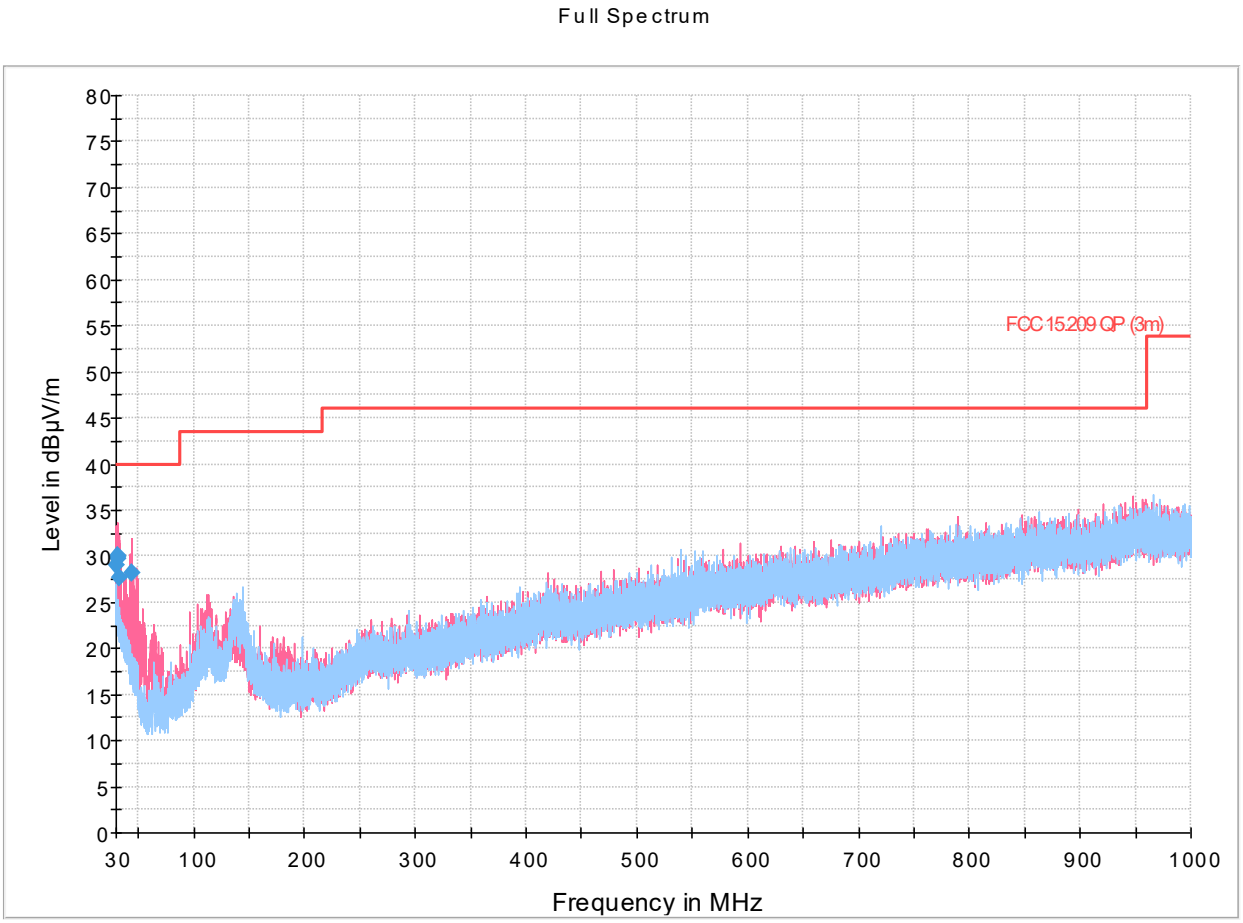


Figure 8.2-3: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-2A band, high channel*

Table 8.2-4: *Radiated emissions, restricted band edge, 802.11a, 6 Mbps, U-NII-2A band, high channel*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5350.000000	42.77	---	68.20	25.43	5000.0	1000.000	188.0	V	127.0	-2.1
5416.714667	42.00	---	68.20	26.20	5000.0	1000.000	361.0	V	196.0	-2.2

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



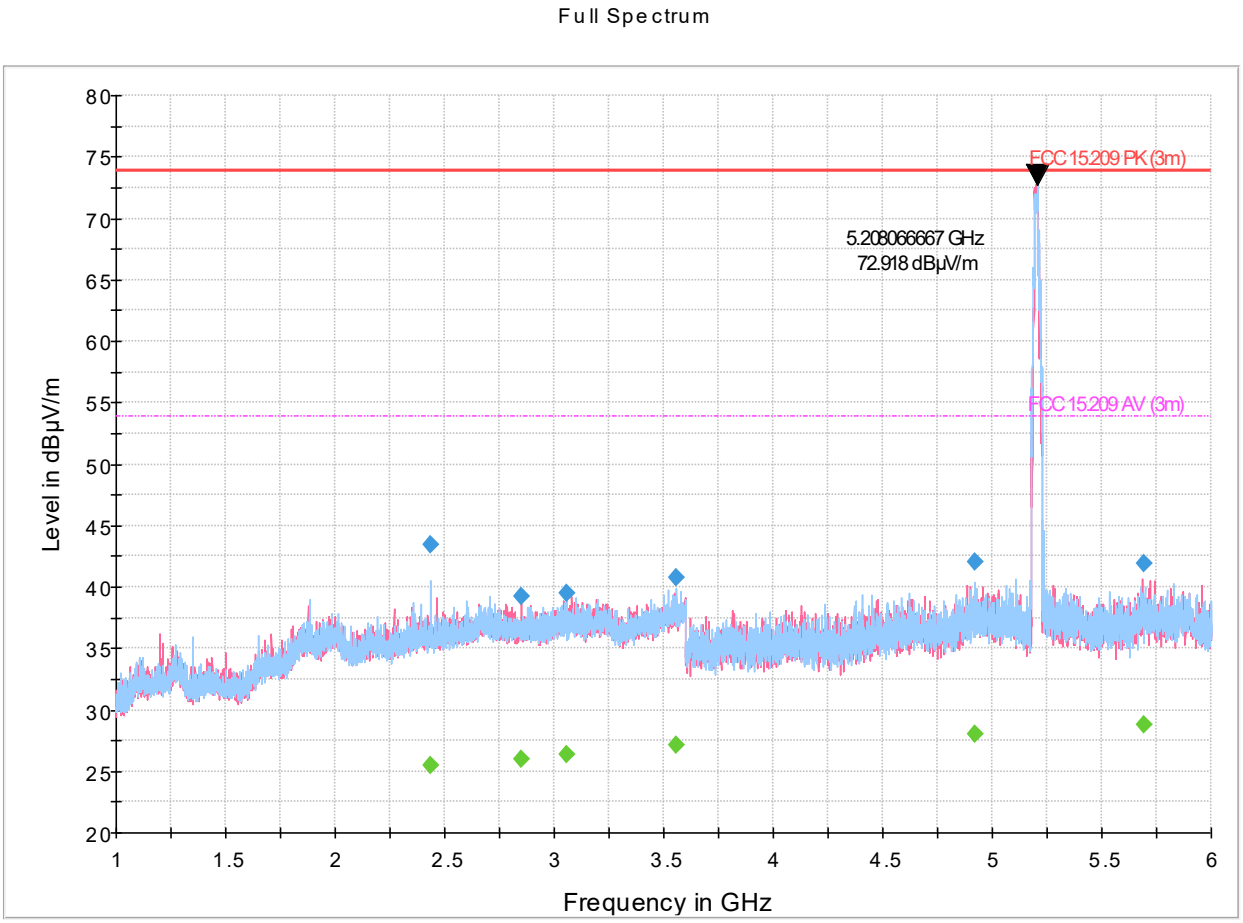
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-4: *Radiated spurious emissions, 802.11a, 6 Mbps, 30-1000 MHz spectral plot (5200 MHz)*

Table 8.2-5: *Radiated spurious emissions, 802.11a, 6 Mbps, 30-1000 MHz (Quasi-Peak) results (5200 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.100000	29.01	40.00	10.99	5000.0	120.000	107.0	V	270.0	26.5
31.018000	30.06	40.00	9.94	5000.0	120.000	100.0	V	0.0	26.1
31.128667	29.75	40.00	10.25	5000.0	120.000	114.0	V	0.0	26.0
31.606000	29.97	40.00	10.03	5000.0	120.000	104.0	V	0.0	25.7
32.723333	27.74	40.00	12.26	5000.0	120.000	114.0	V	0.0	25.1
44.072333	28.20	40.00	11.80	5000.0	120.000	107.0	V	0.0	19.0

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



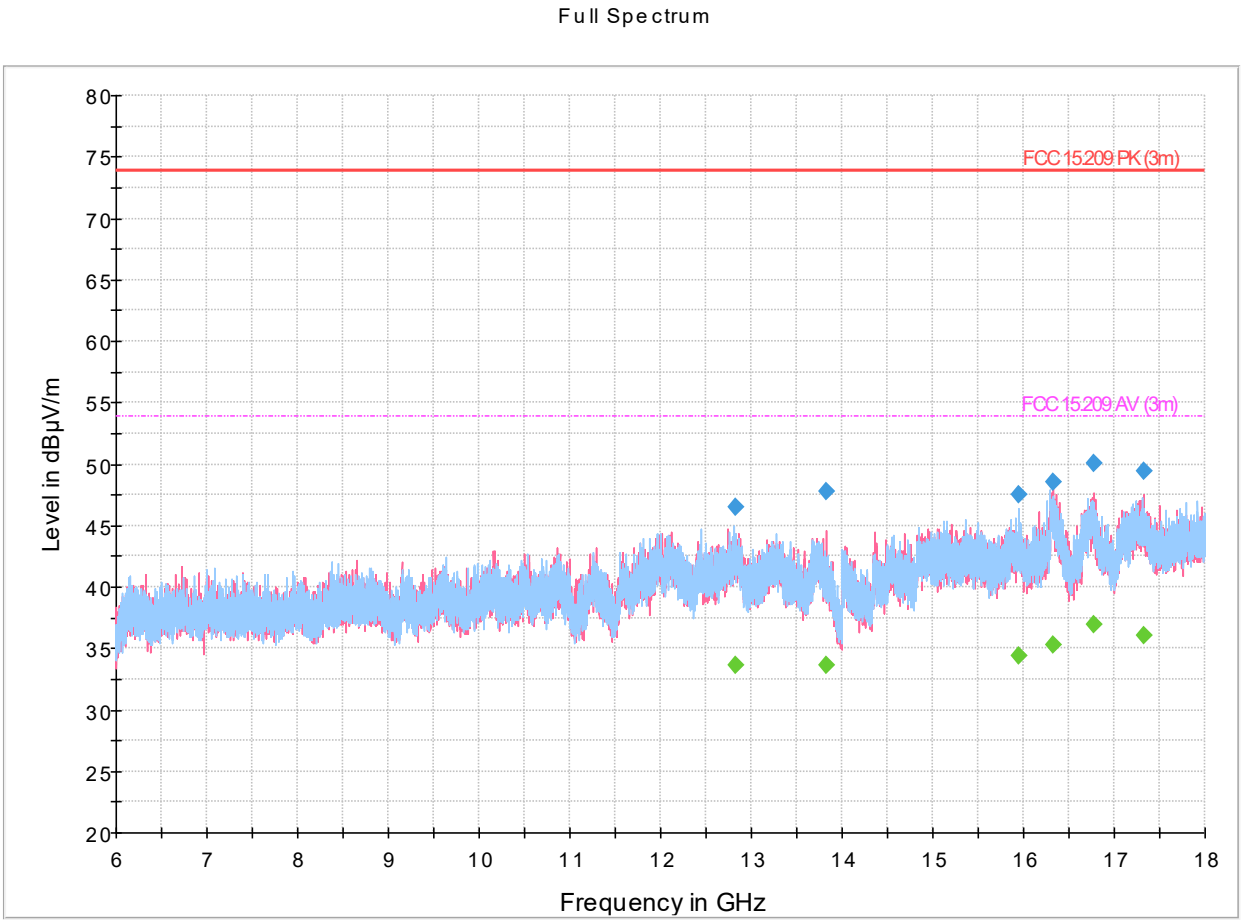
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-5**: Radiated spurious emissions, 802.11a, 6 Mbps, 1-6 GHz spectral plot (5200 MHz)*

***Table 8.2-6:** Radiated spurious emissions, 802.11a, 6 Mbps, 1-6 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2437.133333	43.48	---	73.90	30.42	5000.0	1000.000	162.0	H	22.0	-9.8
2437.133333	---	25.50	53.90	28.40	5000.0	1000.000	162.0	H	22.0	-9.8
2852.466667	---	25.93	53.90	27.97	5000.0	1000.000	400.0	V	0.0	-8.5
2852.466667	39.29	---	73.90	34.61	5000.0	1000.000	400.0	V	0.0	-8.5
3057.266667	---	26.34	53.90	27.56	5000.0	1000.000	146.0	H	248.0	-7.9
3057.266667	39.49	---	73.90	34.41	5000.0	1000.000	146.0	H	248.0	-7.9
3558.200000	40.79	---	73.90	33.11	5000.0	1000.000	364.0	H	167.0	-6.0
3558.200000	---	27.07	53.90	26.83	5000.0	1000.000	364.0	H	167.0	-6.0
4923.133333	42.03	---	73.90	31.87	5000.0	1000.000	260.0	H	280.0	-2.3
4923.133333	---	28.07	53.90	25.83	5000.0	1000.000	260.0	H	280.0	-2.3
5690.400000	41.91	---	73.90	31.99	5000.0	1000.000	283.0	V	291.0	-1.7
5690.400000	---	28.77	53.90	25.13	5000.0	1000.000	283.0	V	291.0	-1.7

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
Marked peak at 5208 MHz is the fundamental emission and is excluded from evaluation against the limits



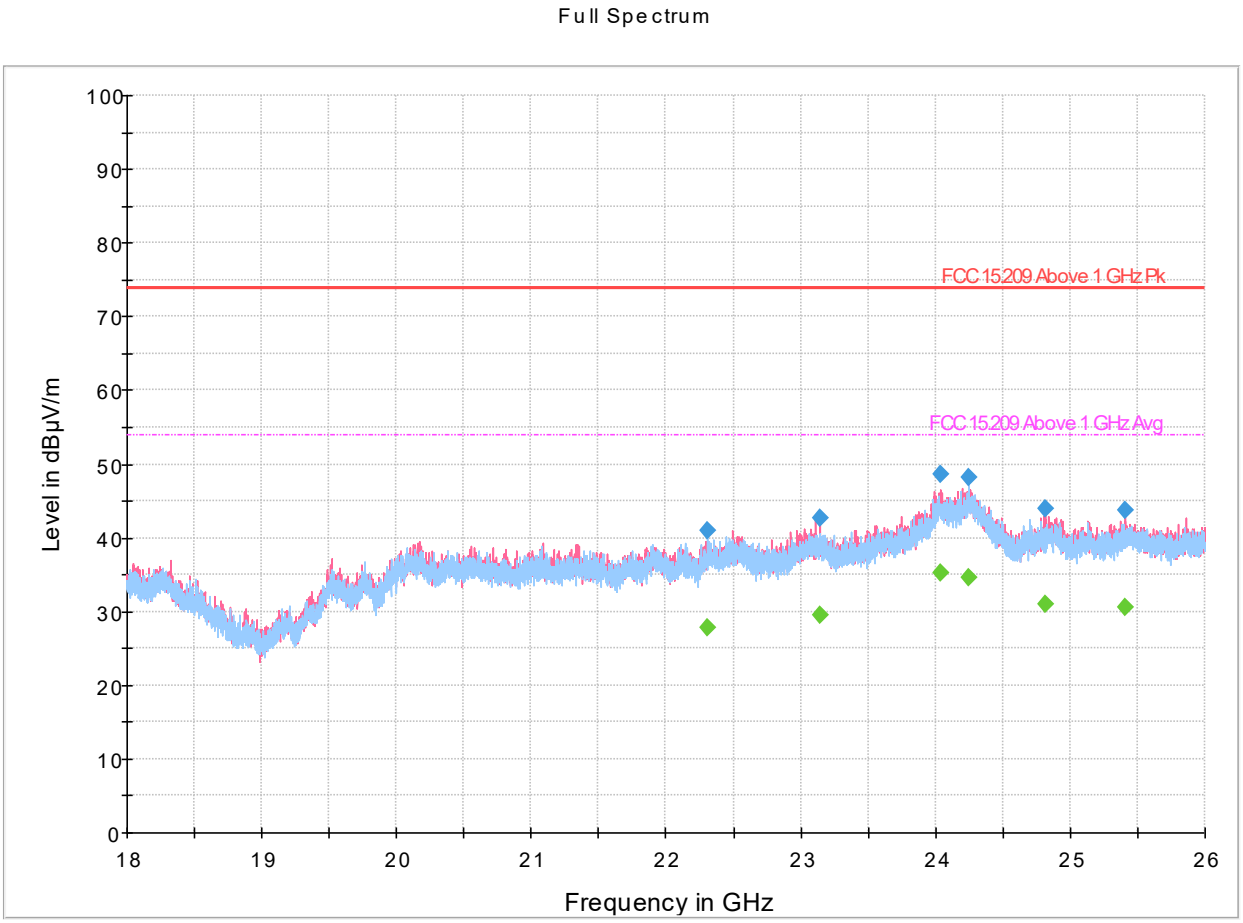
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-6**: Radiated spurious emissions, 802.11a, 6 Mbps, 6-18 GHz spectral plot (5200 MHz)*

***Table 8.2-7:** Radiated spurious emissions, 802.11a, 6 Mbps, 6-18 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
12826.866667	46.51	---	73.90	27.39	5000.0	1000.000	231.0	H	186.0	8.7
12826.866667	---	33.59	53.90	20.31	5000.0	1000.000	231.0	H	186.0	8.7
13831.066667	47.80	---	73.90	26.10	5000.0	1000.000	192.0	V	0.0	10.0
13831.066667	---	33.57	53.90	20.33	5000.0	1000.000	192.0	V	0.0	10.0
15950.800000	47.57	---	73.90	26.33	5000.0	1000.000	399.0	H	50.0	11.1
15950.800000	---	34.35	53.90	19.55	5000.0	1000.000	399.0	H	50.0	11.1
16333.366667	48.57	---	73.90	25.33	5000.0	1000.000	116.0	V	115.0	13.2
16333.366667	---	35.24	53.90	18.66	5000.0	1000.000	116.0	V	115.0	13.2
16776.300000	50.05	---	73.90	23.85	5000.0	1000.000	196.0	V	240.0	14.6
16776.300000	---	36.98	53.90	16.92	5000.0	1000.000	196.0	V	240.0	14.6
17320.900000	49.44	---	73.90	24.46	5000.0	1000.000	272.0	V	198.0	14.6
17320.900000	---	36.03	53.90	17.87	5000.0	1000.000	272.0	V	198.0	14.6

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



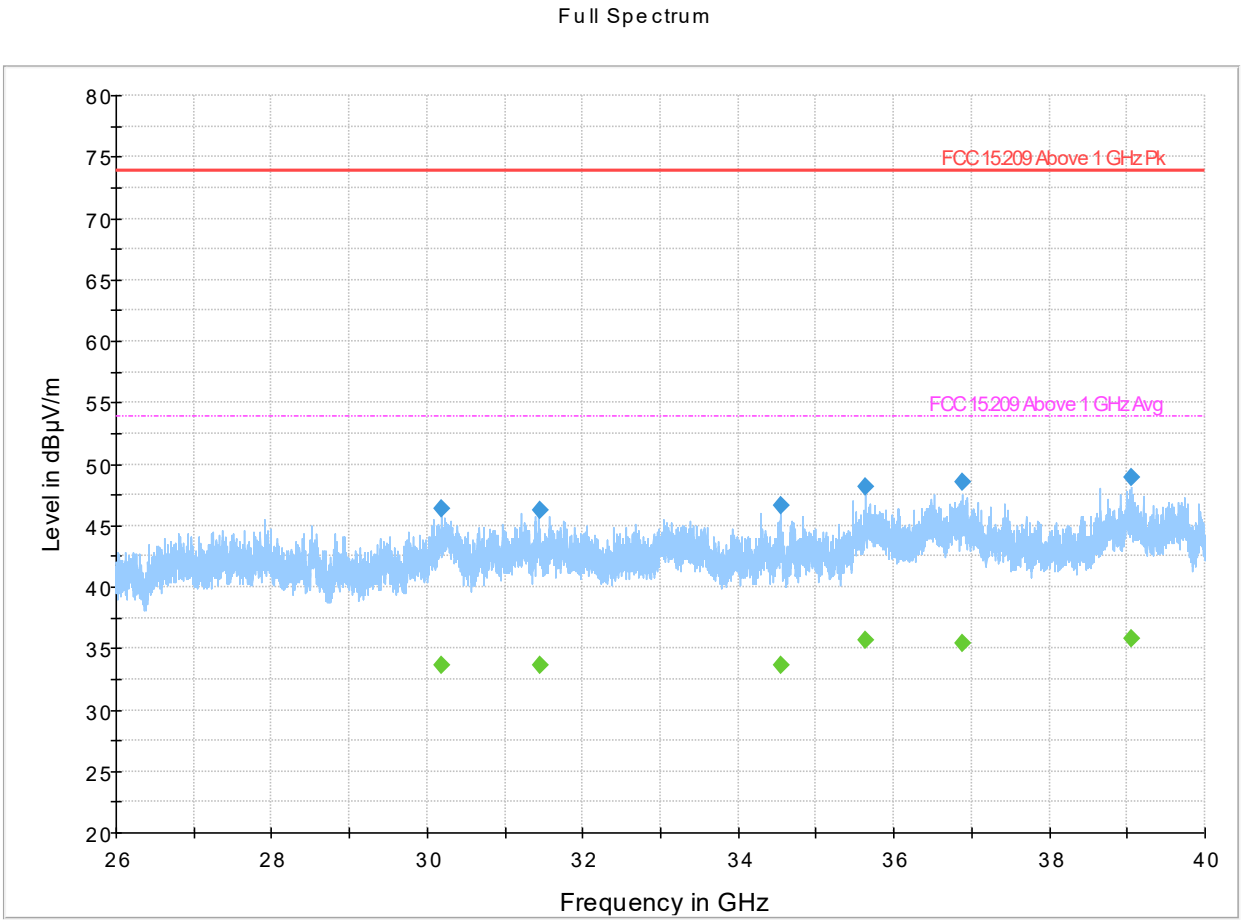
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-7**: Radiated spurious emissions, 802.11a, 6 Mbps, 18-26 GHz spectral plot (5200 MHz)*

***Table 8.2-8:** Radiated spurious emissions, 802.11a, 6 Mbps, 18-26 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
22309.500000	41.04	---	73.90	32.86	5000.0	1000.000	149.0	H	275.0	2.3
22309.500000	---	27.89	53.90	26.01	5000.0	1000.000	149.0	H	275.0	2.3
23139.900000	---	29.43	53.90	24.47	5000.0	1000.000	168.0	V	15.0	3.0
23139.900000	42.67	---	73.90	31.23	5000.0	1000.000	168.0	V	15.0	3.0
24033.100000	48.69	---	73.90	25.21	5000.0	1000.000	222.0	V	209.0	9.2
24033.100000	---	35.34	53.90	18.56	5000.0	1000.000	222.0	V	209.0	9.2
24246.700000	---	34.71	53.90	19.19	5000.0	1000.000	131.0	H	115.0	9.4
24246.700000	48.16	---	73.90	25.74	5000.0	1000.000	131.0	H	115.0	9.4
24810.700000	43.93	---	73.90	29.97	5000.0	1000.000	114.0	V	35.0	4.9
24810.700000	---	30.93	53.90	22.97	5000.0	1000.000	114.0	V	35.0	4.9
25411.100000	43.84	---	73.90	30.06	5000.0	1000.000	225.0	V	0.0	4.2
25411.100000	---	30.49	53.90	23.41	5000.0	1000.000	225.0	V	0.0	4.2

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



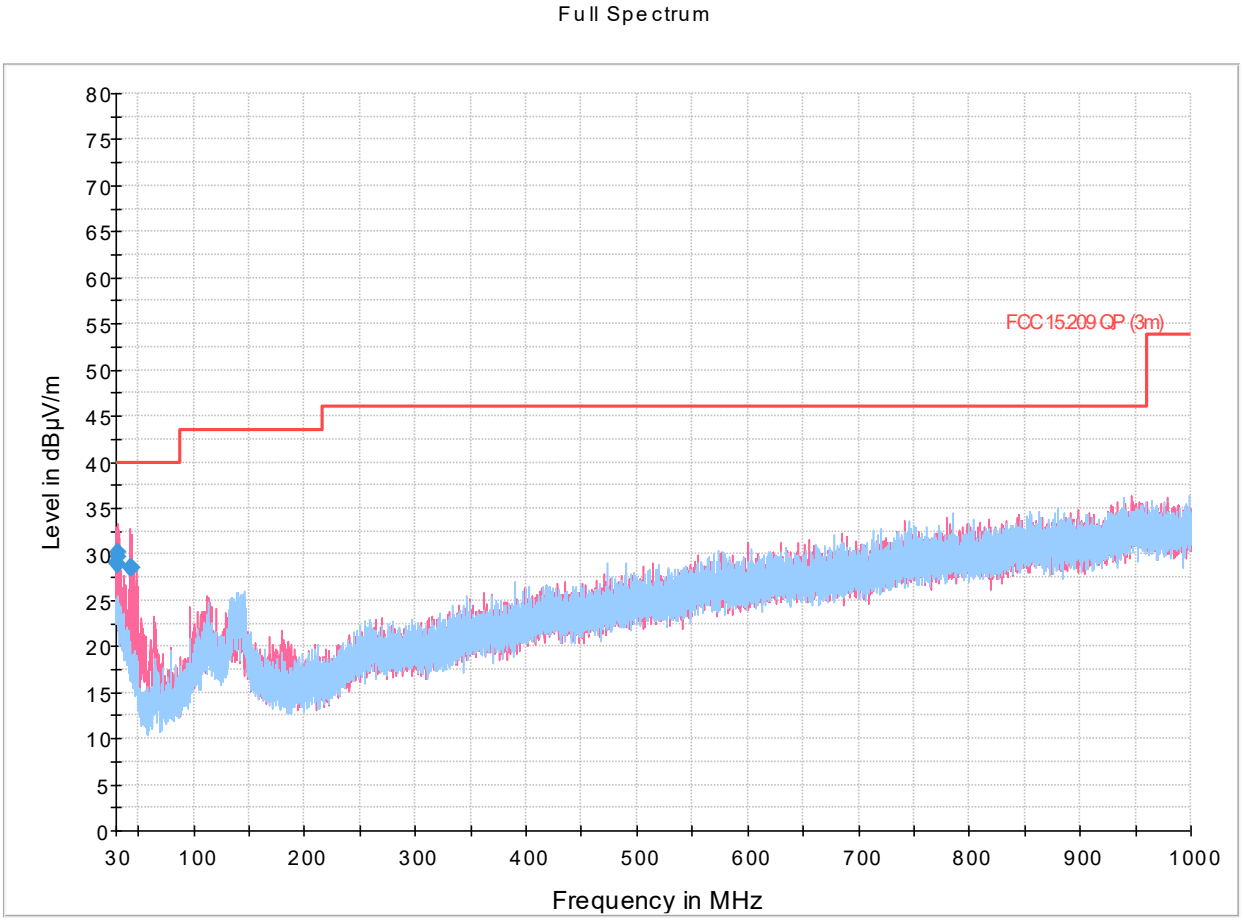
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-8**: Radiated spurious emissions, 802.11a, 6 Mbps, 26-40 GHz spectral plot (5200 MHz)*

***Table 8.2-9:** Radiated spurious emissions, 802.11a, 6 Mbps, 26-40 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30181.375000	---	33.65	53.90	20.25	1000.0	1000.000	192.0	H	86.0	10.4
30181.375000	46.37	---	73.90	27.53	1000.0	1000.000	192.0	H	86.0	10.4
31441.850000	---	33.61	53.90	20.29	1000.0	1000.000	222.0	H	139.0	11.3
31441.850000	46.21	---	73.90	27.69	1000.0	1000.000	222.0	H	139.0	11.3
34547.325000	46.64	---	73.90	27.26	1000.0	1000.000	223.0	H	0.0	12.5
34547.325000	---	33.58	53.90	20.32	1000.0	1000.000	223.0	H	0.0	12.5
35637.800000	---	35.65	53.90	18.25	1000.0	1000.000	114.0	H	96.0	13.5
35637.800000	48.13	---	73.90	25.77	1000.0	1000.000	114.0	H	96.0	13.5
36887.050000	48.59	---	73.90	25.31	1000.0	1000.000	125.0	H	0.0	14.5
36887.050000	---	35.47	53.90	18.43	1000.0	1000.000	125.0	H	0.0	14.5
39054.775000	---	35.83	53.90	18.07	1000.0	1000.000	129.0	V	90.0	16.2
39054.775000	48.93	---	73.90	24.97	1000.0	1000.000	129.0	V	90.0	16.2

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



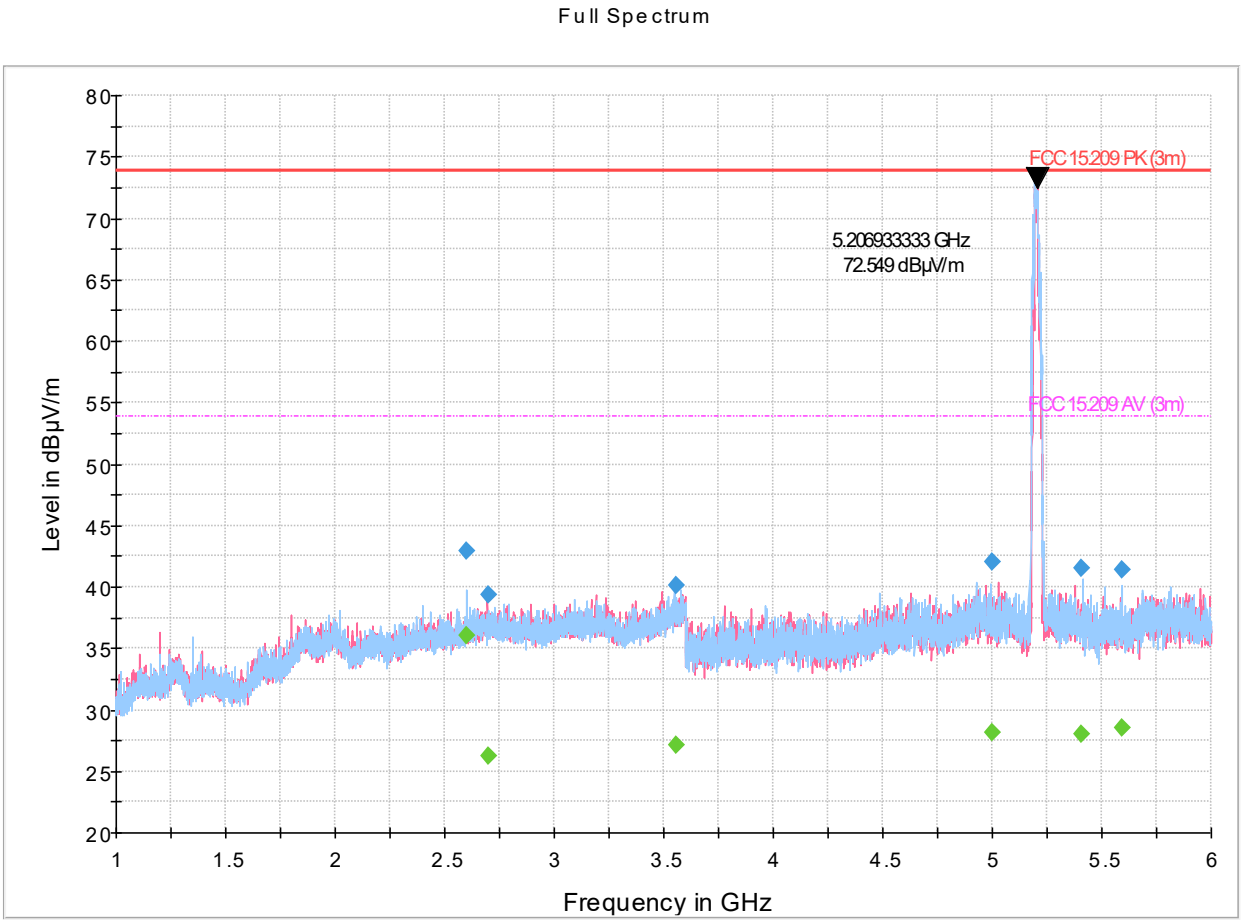
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-9: *Radiated spurious emissions, 802.11n-HT20, MSC0, 30-1000 MHz spectral plot (5200 MHz)*

Table 8.2-10: *Radiated spurious emissions, 802.11n-HT20, MSC0, 30-1000 MHz (Quasi-Peak) results (5200 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.380000	29.06	40.00	10.94	5000.0	120.000	111.0	V	0.0	26.4
30.921000	30.31	40.00	9.69	5000.0	120.000	100.0	V	352.0	26.1
31.309000	28.89	40.00	11.11	5000.0	120.000	117.0	V	82.0	25.9
31.961667	29.71	40.00	10.29	5000.0	120.000	103.0	V	0.0	25.5
43.373667	28.50	40.00	11.50	5000.0	120.000	104.0	V	0.0	19.4
43.851000	28.48	40.00	11.52	5000.0	120.000	103.0	V	21.0	19.1

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



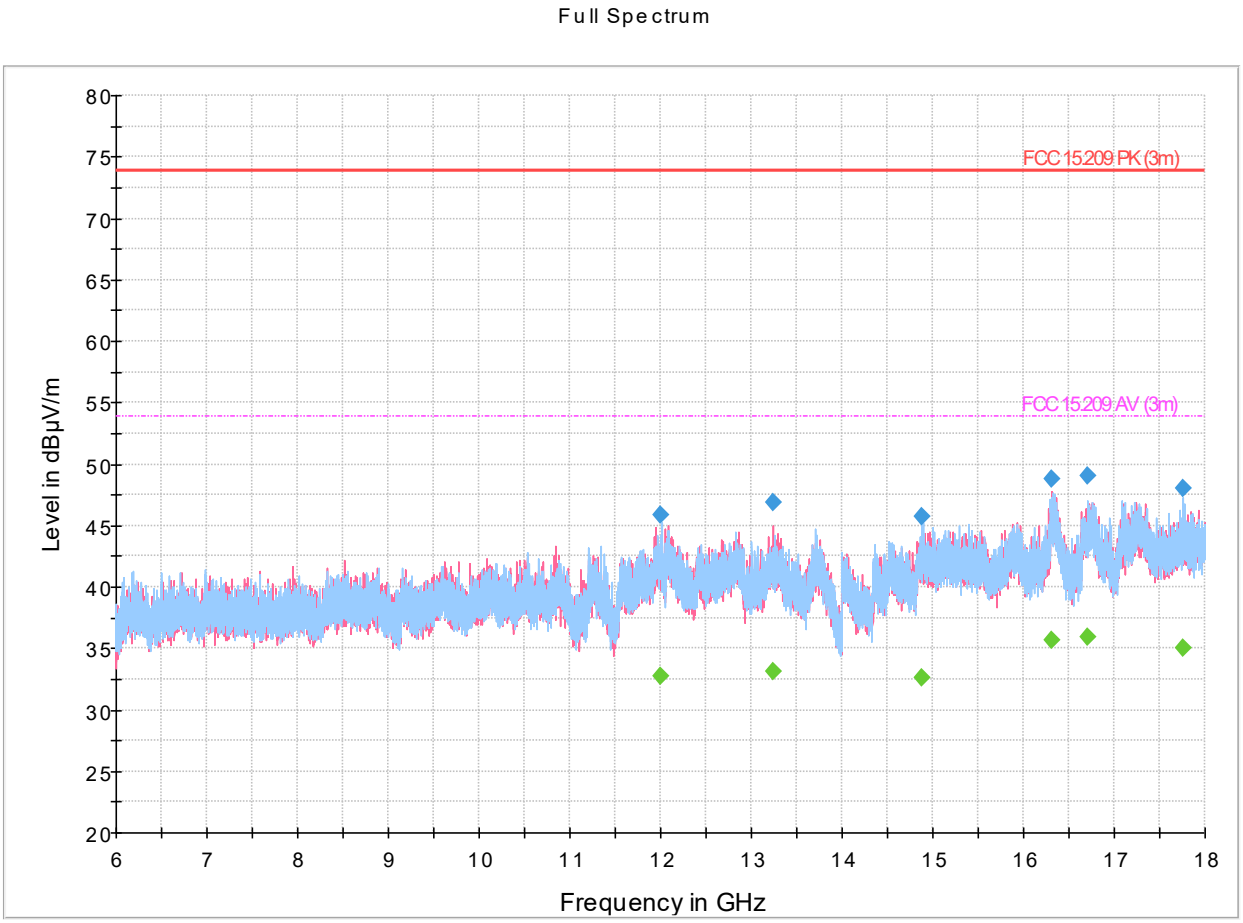
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-10**: Radiated spurious emissions, 802.11n-HT20, MSC0, 1-6 GHz spectral plot (5200 MHz)*

***Table 8.2-11:** Radiated spurious emissions, 802.11n-HT20, MSC0, 1-6 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2600.100000	---	36.10	53.90	17.80	5000.0	1000.000	328.0	H	235.0	-9.4
2600.100000	42.99	---	73.90	30.91	5000.0	1000.000	328.0	H	235.0	-9.4
2696.833333	---	26.28	53.90	27.62	5000.0	1000.000	305.0	V	116.0	-8.7
2696.833333	39.41	---	73.90	34.49	5000.0	1000.000	305.0	V	116.0	-8.7
3556.100000	40.08	---	73.90	33.82	5000.0	1000.000	299.0	H	315.0	-6.0
3556.100000	---	27.09	53.90	26.81	5000.0	1000.000	299.0	H	315.0	-6.0
4996.933333	42.03	---	73.90	31.87	5000.0	1000.000	225.0	H	170.0	-2.5
4996.933333	---	28.10	53.90	25.80	5000.0	1000.000	225.0	H	170.0	-2.5
5410.366667	41.50	---	73.90	32.40	5000.0	1000.000	204.0	H	115.0	-2.2
5410.366667	---	28.07	53.90	25.83	5000.0	1000.000	204.0	H	115.0	-2.2
5594.400000	41.36	---	73.90	32.54	5000.0	1000.000	234.0	H	0.0	-2.6
5594.400000	---	28.58	53.90	25.32	5000.0	1000.000	234.0	H	0.0	-2.6

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
The marked emission at 5207 MHz is the fundamental emission and is excluded from evaluation against the limits.



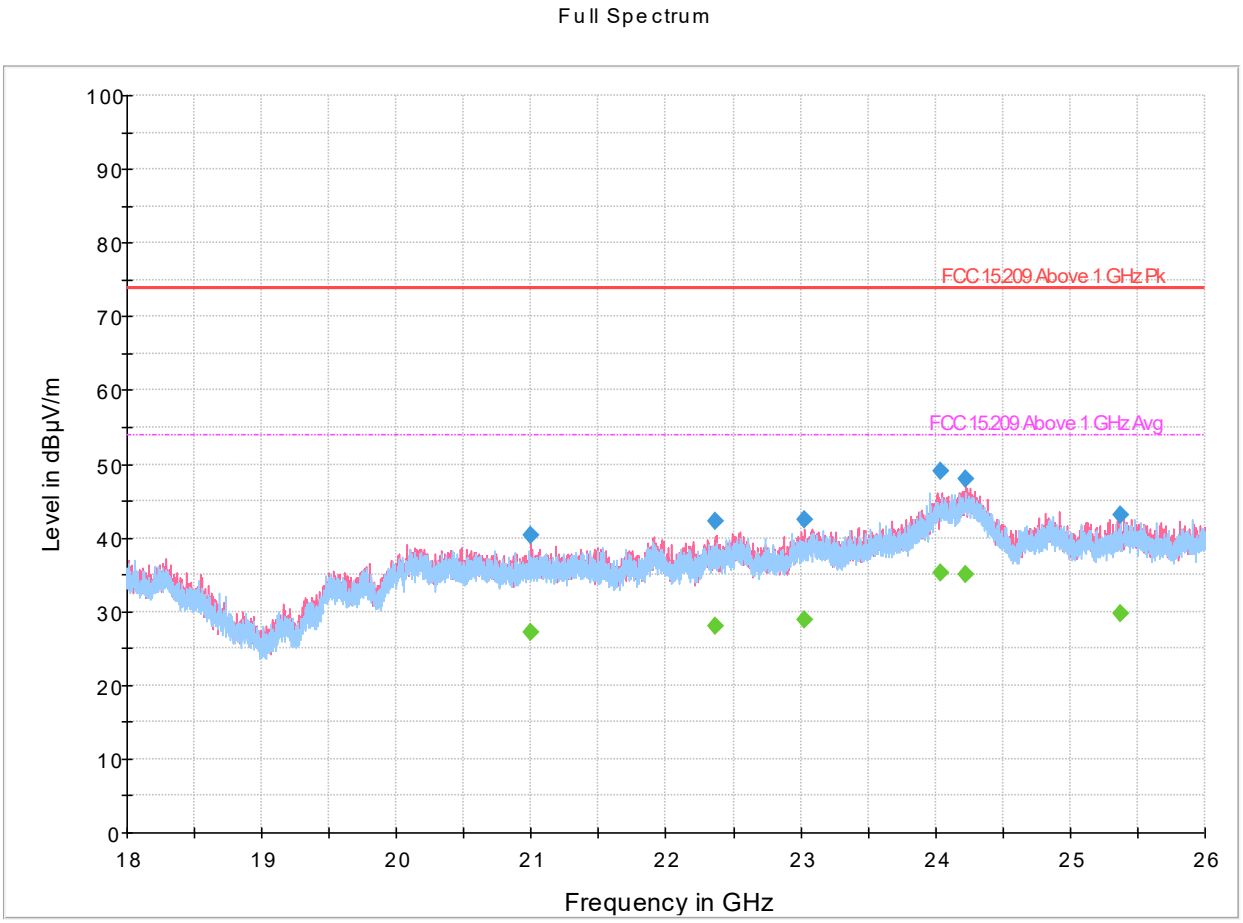
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-11**: Radiated spurious emissions, 802.11n-HT20, MSC0, 6-18 GHz spectral plot (5200 MHz)*

***Table 8.2-12:** Radiated spurious emissions, 802.11n-HT20, MSC0, 6-18 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
12007.066667	45.86	---	73.90	28.04	5000.0	1000.000	295.0	H	354.0	6.2
12007.066667	---	32.76	53.90	21.14	5000.0	1000.000	295.0	H	354.0	6.2
13240.166667	46.82	---	73.90	27.08	5000.0	1000.000	108.0	V	76.0	9.2
13240.166667	---	33.08	53.90	20.82	5000.0	1000.000	108.0	V	76.0	9.2
14880.100000	45.68	---	73.90	28.22	5000.0	1000.000	356.0	H	349.0	10.3
14880.100000	---	32.66	53.90	21.24	5000.0	1000.000	356.0	H	349.0	10.3
16305.700000	---	35.70	53.90	18.20	5000.0	1000.000	371.0	V	36.0	13.4
16305.700000	48.80	---	73.90	25.10	5000.0	1000.000	371.0	V	36.0	13.4
16713.433333	---	35.95	53.90	17.95	5000.0	1000.000	237.0	H	262.0	14.7
16713.433333	49.05	---	73.90	24.85	5000.0	1000.000	237.0	H	262.0	14.7
17766.100000	48.06	---	73.90	25.84	5000.0	1000.000	354.0	H	317.0	14.9
17766.100000	---	35.08	53.90	18.82	5000.0	1000.000	354.0	H	317.0	14.9

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



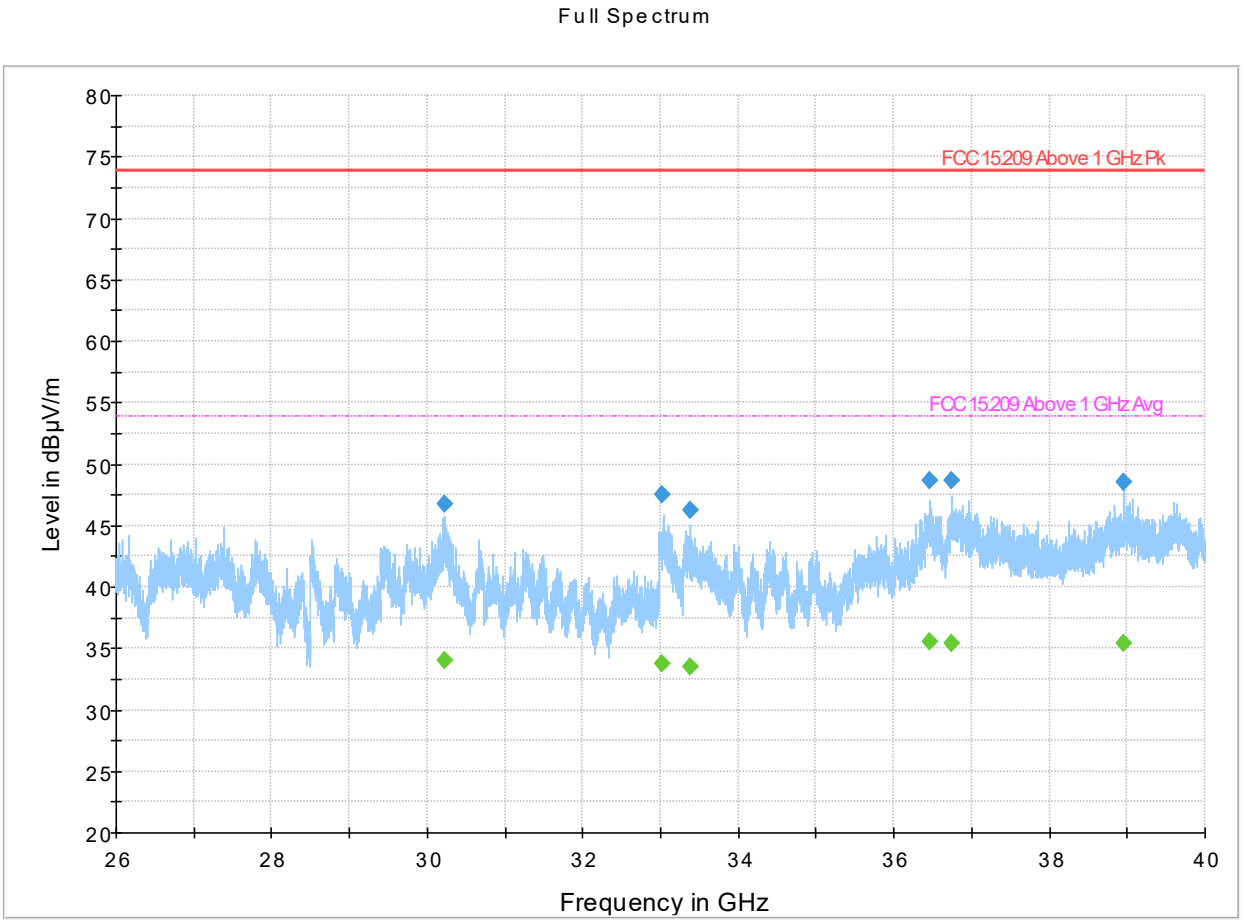
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-12**: Radiated spurious emissions, 802.11n-HT20, MSC0, 18-26 GHz spectral plot (5200 MHz)*

***Table 8.2-13:** Radiated spurious emissions, 802.11n-HT20, MSC0, 18-26 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20997.900000	40.39	---	73.90	33.51	5000.0	1000.000	142.0	V	71.0	2.3
20997.900000	---	27.19	53.90	26.71	5000.0	1000.000	142.0	V	71.0	2.3
22369.500000	---	28.08	53.90	25.82	5000.0	1000.000	135.0	V	269.0	2.3
22369.500000	42.17	---	73.90	31.73	5000.0	1000.000	135.0	V	269.0	2.3
23033.100000	42.49	---	73.90	31.41	5000.0	1000.000	111.0	V	210.0	3.0
23033.100000	---	28.90	53.90	25.00	5000.0	1000.000	111.0	V	210.0	3.0
24043.100000	---	35.16	53.90	18.74	5000.0	1000.000	120.0	V	186.0	9.2
24043.100000	48.99	---	73.90	24.91	5000.0	1000.000	120.0	V	186.0	9.2
24221.500000	48.02	---	73.90	25.88	5000.0	1000.000	175.0	V	-11.0	9.4
24221.500000	---	35.10	53.90	18.80	5000.0	1000.000	175.0	V	-11.0	9.4
25368.300000	43.10	---	73.90	30.80	5000.0	1000.000	107.0	H	168.0	4.2
25368.300000	---	29.63	53.90	24.27	5000.0	1000.000	107.0	H	168.0	4.2

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



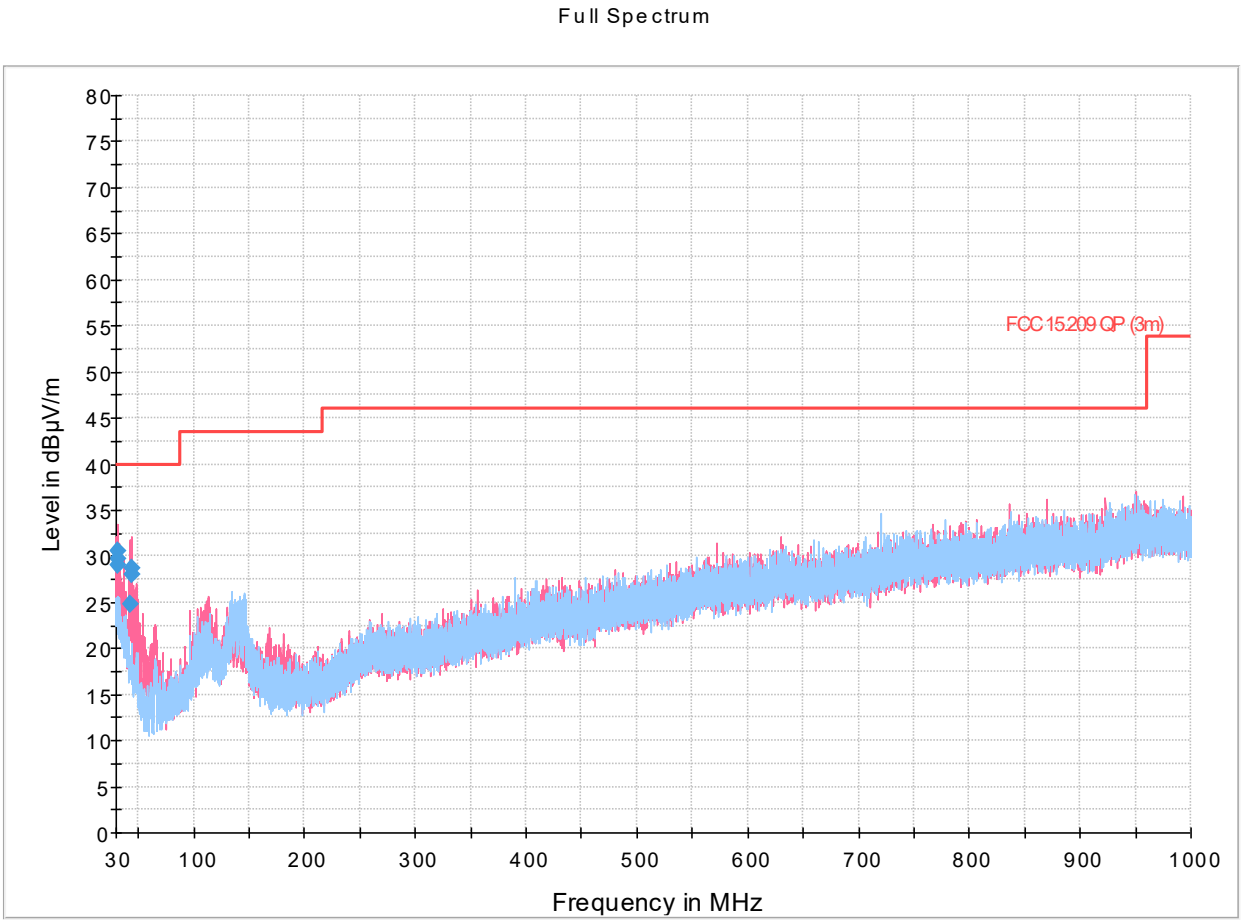
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-13**: Radiated spurious emissions, 802.11n-HT20, MSC0, 26-40 GHz spectral plot (5200 MHz)*

***Table 8.2-14:** Radiated spurious emissions, 802.11n-HT20, MSC0, 26-40 GHz results (5200 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30233.875000	---	34.07	53.90	19.83	1000.0	1000.000	139.0	H	0.0	10.5
30233.875000	46.72	---	73.90	27.18	1000.0	1000.000	139.0	H	0.0	10.5
33021.625000	---	33.71	53.90	20.19	1000.0	1000.000	225.0	V	52.0	11.9
33021.625000	47.58	---	73.90	26.32	1000.0	1000.000	225.0	V	52.0	11.9
33374.750000	---	33.51	53.90	20.39	1000.0	1000.000	179.0	H	152.0	11.3
33374.750000	46.30	---	73.90	27.60	1000.0	1000.000	179.0	H	152.0	11.3
36463.400000	---	35.49	53.90	18.41	1000.0	1000.000	179.0	H	90.0	13.9
36463.400000	48.72	---	73.90	25.18	1000.0	1000.000	179.0	H	90.0	13.9
36745.725000	---	35.43	53.90	18.47	1000.0	1000.000	175.0	H	103.0	14.4
36745.725000	48.67	---	73.90	25.23	1000.0	1000.000	175.0	H	103.0	14.4
38961.650000	---	35.35	53.90	18.55	1000.0	1000.000	179.0	V	208.0	16.0
38961.650000	48.47	---	73.90	25.43	1000.0	1000.000	179.0	V	208.0	16.0

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



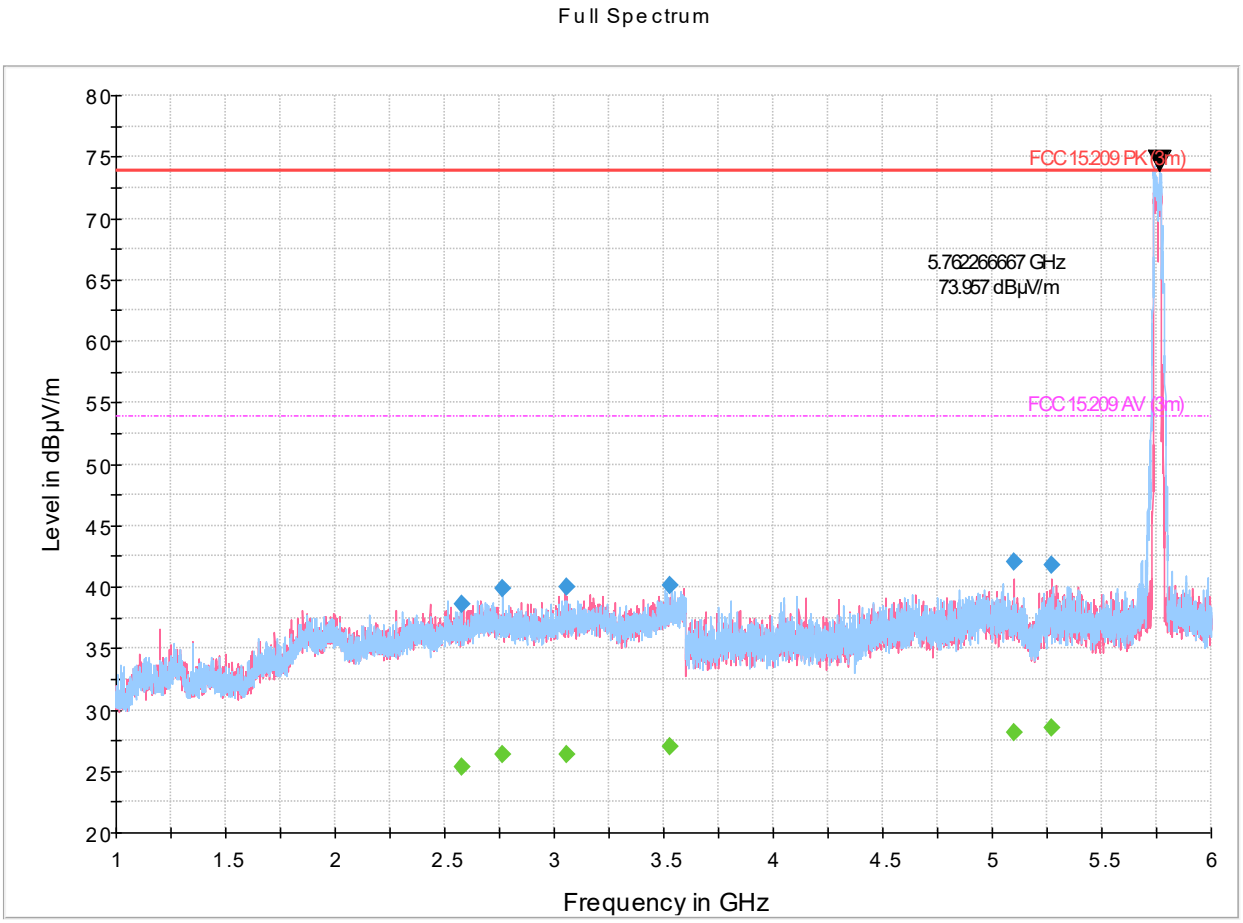
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-14: *Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 30-1000 MHz spectral plot (5745 MHz)*

Table 8.2-15: *Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 30-1000 MHz (Quasi-Peak) results (5745 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.740000	29.78	40.00	10.22	5000.0	120.000	104.0	V	353.0	26.2
30.782333	30.62	40.00	9.38	5000.0	120.000	100.0	V	206.0	26.2
31.082667	28.97	40.00	11.03	5000.0	120.000	126.0	V	212.0	26.0
42.953333	24.84	40.00	15.16	5000.0	120.000	100.0	V	281.0	19.6
43.605000	28.64	40.00	11.36	5000.0	120.000	103.0	V	0.0	19.3
43.624667	28.01	40.00	11.99	5000.0	120.000	113.0	V	0.0	19.2

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



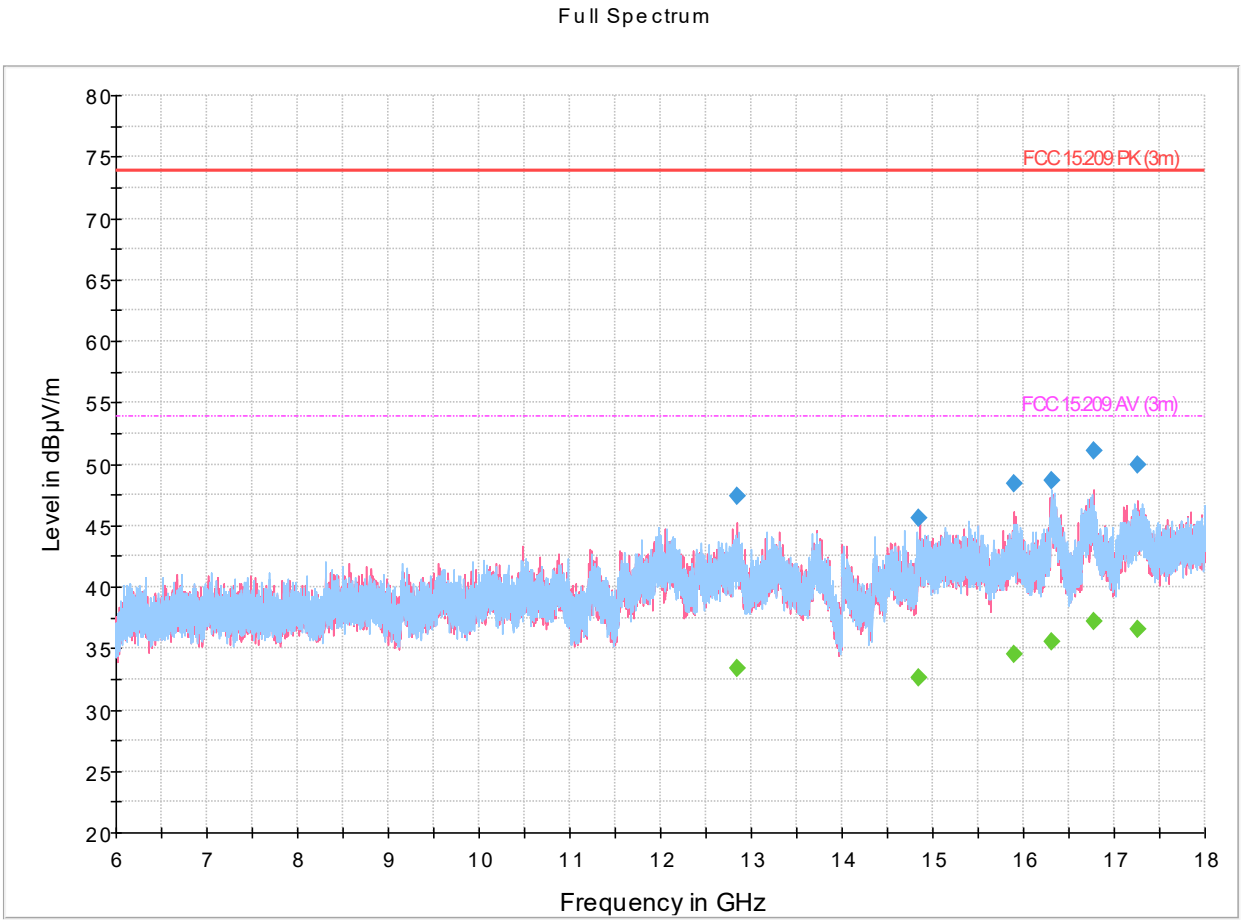
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-15**: Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 1-6 GHz spectral plot (5745 MHz)*

***Table 8.2-16:** Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 1-6 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2576.633333	38.56	---	73.90	35.34	5000.0	1000.000	239.0	V	89.0	-9.6
2576.633333	---	25.39	53.90	28.51	5000.0	1000.000	239.0	V	89.0	-9.6
2761.866667	39.83	---	73.90	34.07	5000.0	1000.000	236.0	H	276.0	-8.6
2761.866667	---	26.32	53.90	27.58	5000.0	1000.000	236.0	H	276.0	-8.6
3059.733333	39.97	---	73.90	33.93	5000.0	1000.000	135.0	V	156.0	-7.8
3059.733333	---	26.39	53.90	27.51	5000.0	1000.000	135.0	V	156.0	-7.8
3525.733333	---	27.02	53.90	26.88	5000.0	1000.000	374.0	V	130.0	-6.1
3525.733333	40.17	---	73.90	33.73	5000.0	1000.000	374.0	V	130.0	-6.1
5098.533333	42.07	---	73.90	31.83	5000.0	1000.000	265.0	V	49.0	-2.5
5098.533333	---	28.18	53.90	25.72	5000.0	1000.000	265.0	V	49.0	-2.5
5272.433333	---	28.49	53.90	25.41	5000.0	1000.000	348.0	V	155.0	-2.1
5272.433333	41.72	---	73.90	32.18	5000.0	1000.000	348.0	V	155.0	-2.1

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
The marked emission at 5762 MHz is the fundamental emission and is excluded from evaluation against the limits



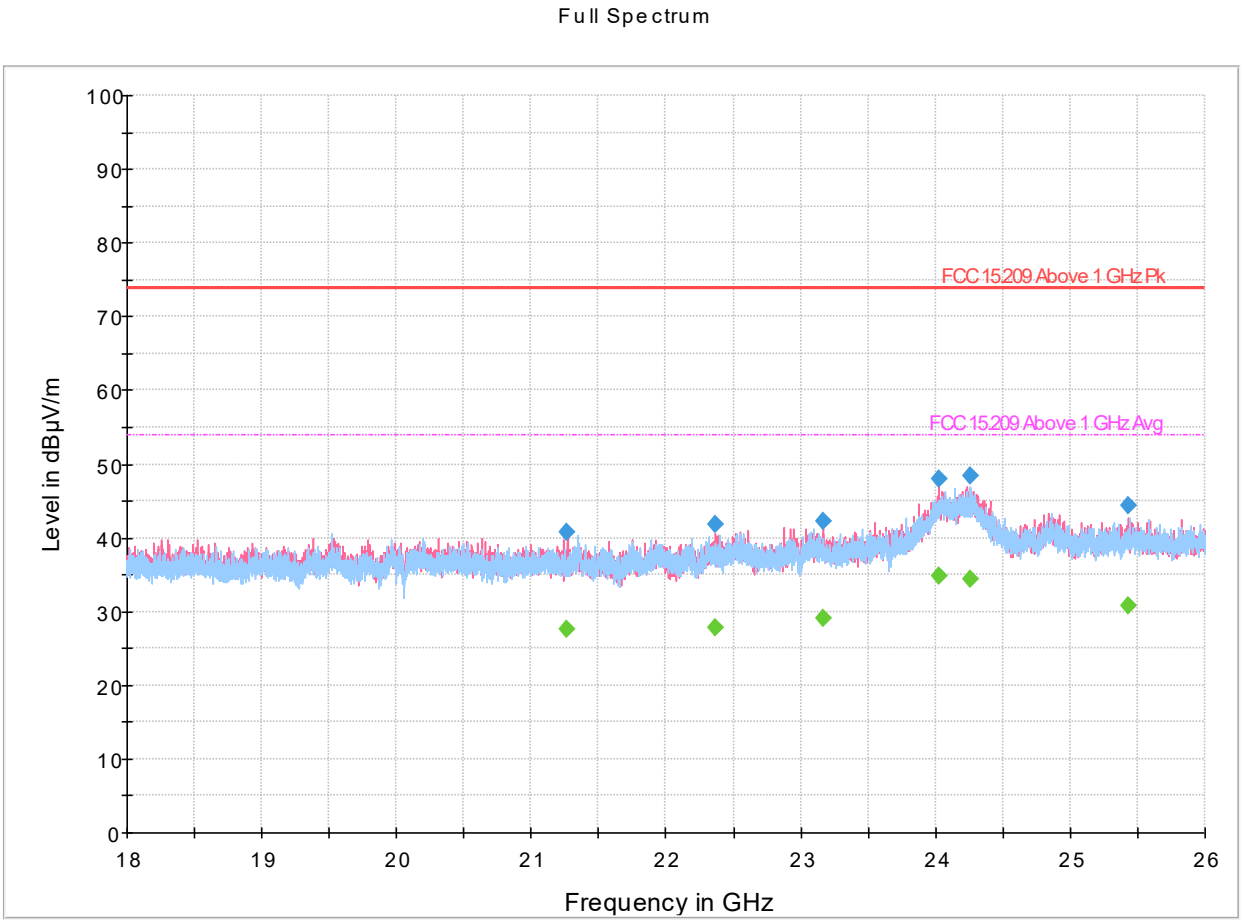
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-16**: Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 6-18 GHz spectral plot (5745 MHz)*

***Table 8.2-17:** Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 6-18 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
12850.433333	---	33.42	53.90	20.48	5000.0	1000.000	397.0	V	94.0	8.7
12850.433333	47.39	---	73.90	26.51	5000.0	1000.000	397.0	V	94.0	8.7
14850.266667	---	32.62	53.90	21.28	5000.0	1000.000	182.0	V	141.0	10.2
14850.266667	45.60	---	73.90	28.30	5000.0	1000.000	182.0	V	141.0	10.2
15900.233333	48.39	---	73.90	25.51	5000.0	1000.000	223.0	V	11.0	11.4
15900.233333	---	34.56	53.90	19.34	5000.0	1000.000	223.0	V	11.0	11.4
16310.700000	48.69	---	73.90	25.21	5000.0	1000.000	172.0	H	10.0	13.4
16310.700000	---	35.53	53.90	18.37	5000.0	1000.000	172.0	H	10.0	13.4
16769.366667	---	37.20	53.90	16.70	5000.0	1000.000	223.0	V	91.0	14.7
16769.366667	51.10	---	73.90	22.80	5000.0	1000.000	223.0	V	91.0	14.7
17252.500000	---	36.57	53.90	17.33	5000.0	1000.000	235.0	V	145.0	15.1
17252.500000	49.97	---	73.90	23.93	5000.0	1000.000	235.0	V	145.0	15.1

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



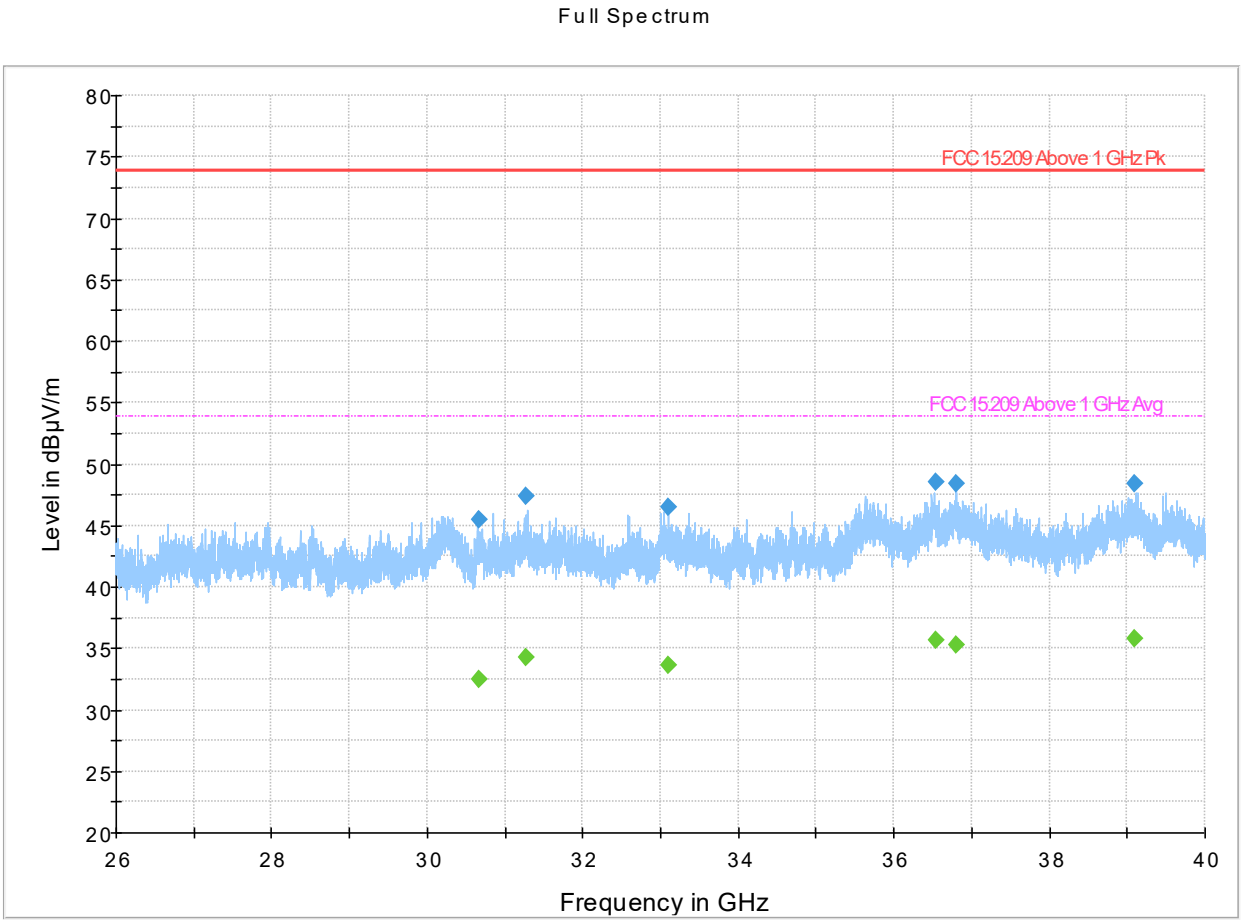
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-17**: Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 18-26 GHz spectral plot (5745 MHz)*

***Table 8.2-18:** Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 18-26 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21267.500000	---	27.59	53.90	26.31	5000.0	1000.000	123.0	V	141.0	2.4
21267.500000	40.85	---	73.90	33.05	5000.0	1000.000	123.0	V	141.0	2.4
22364.300000	41.89	---	73.90	32.01	5000.0	1000.000	102.0	V	56.0	2.3
22364.300000	---	27.81	53.90	26.09	5000.0	1000.000	102.0	V	56.0	2.3
23166.300000	---	29.14	53.90	24.76	5000.0	1000.000	129.0	V	206.0	3.0
23166.300000	42.16	---	73.90	31.74	5000.0	1000.000	129.0	V	206.0	3.0
24028.900000	---	34.92	53.90	18.98	5000.0	1000.000	168.0	V	164.0	9.2
24028.900000	48.07	---	73.90	25.83	5000.0	1000.000	168.0	V	164.0	9.2
24261.500000	---	34.35	53.90	19.55	5000.0	1000.000	175.0	H	0.0	9.4
24261.500000	48.31	---	73.90	25.59	5000.0	1000.000	175.0	H	0.0	9.4
25431.900000	44.32	---	73.90	29.59	5000.0	1000.000	111.0	V	9.0	4.3
25431.900000	---	30.74	53.90	23.16	5000.0	1000.000	111.0	V	9.0	4.3

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



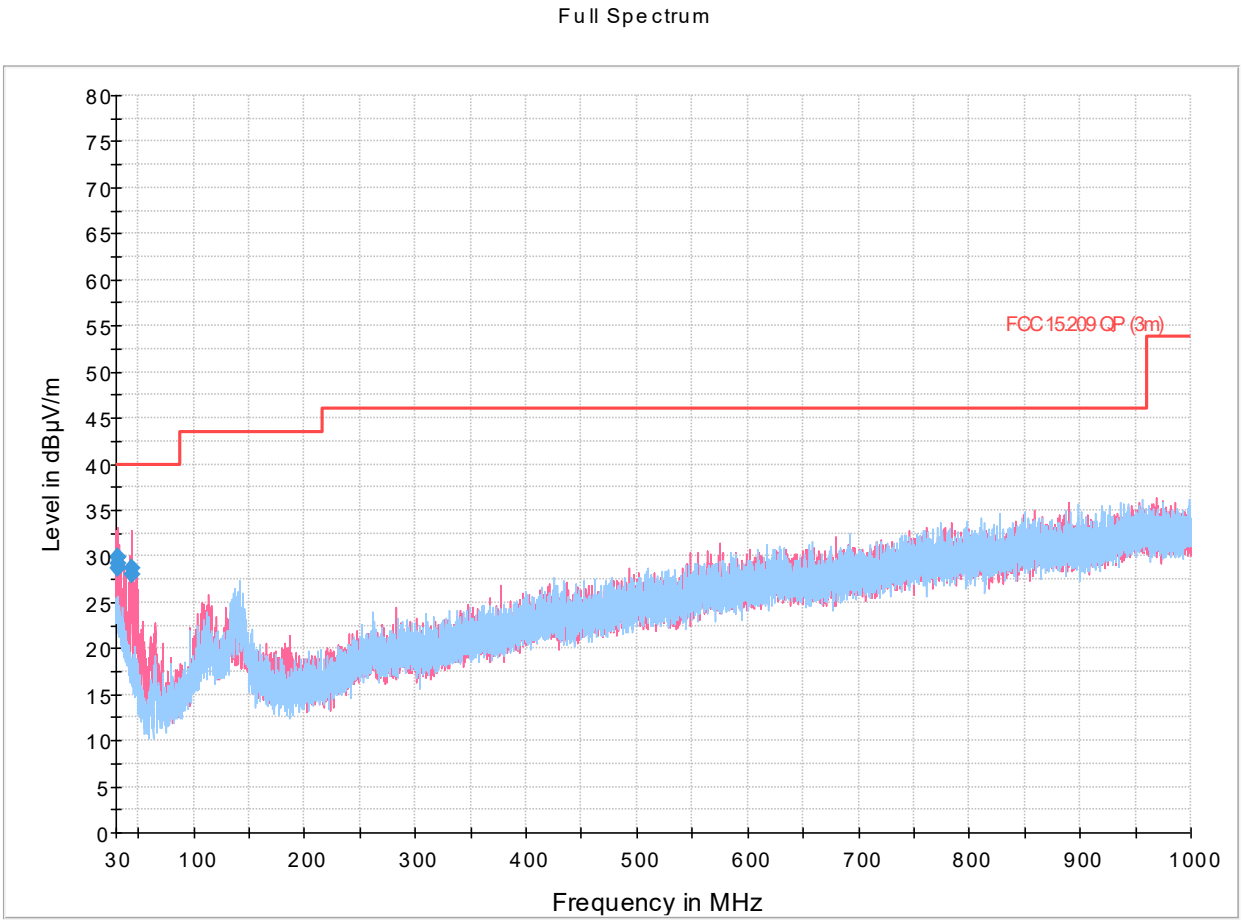
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-18**: Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 26-40 GHz spectral plot (5745 MHz)*

***Table 8.2-19:** Radiated spurious emissions, 802.11n, 40 MHz, MSC0, 26-40 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30664.025000	---	32.51	53.90	21.39	1000.0	1000.000	117.0	H	44.0	11.0
30664.025000	45.42	---	73.90	28.48	1000.0	1000.000	117.0	H	44.0	11.0
31277.850000	---	34.21	53.90	19.69	1000.0	1000.000	115.0	V	295.0	11.4
31277.850000	47.37	---	73.90	26.53	1000.0	1000.000	115.0	V	295.0	11.4
33098.600000	46.52	---	73.90	27.38	1000.0	1000.000	191.0	H	141.0	11.8
33098.600000	---	33.57	53.90	20.33	1000.0	1000.000	191.0	H	141.0	11.8
36532.775000	---	35.63	53.90	18.27	1000.0	1000.000	102.0	V	32.0	14.0
36532.775000	48.58	---	73.90	25.32	1000.0	1000.000	102.0	V	32.0	14.0
36802.100000	48.45	---	73.90	25.45	1000.0	1000.000	124.0	H	293.0	14.5
36802.100000	---	35.25	53.90	18.65	1000.0	1000.000	124.0	H	293.0	14.5
39103.175000	---	35.74	53.90	18.16	1000.0	1000.000	209.0	V	293.0	16.3
39103.175000	48.38	---	73.90	25.52	1000.0	1000.000	209.0	V	293.0	16.3

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



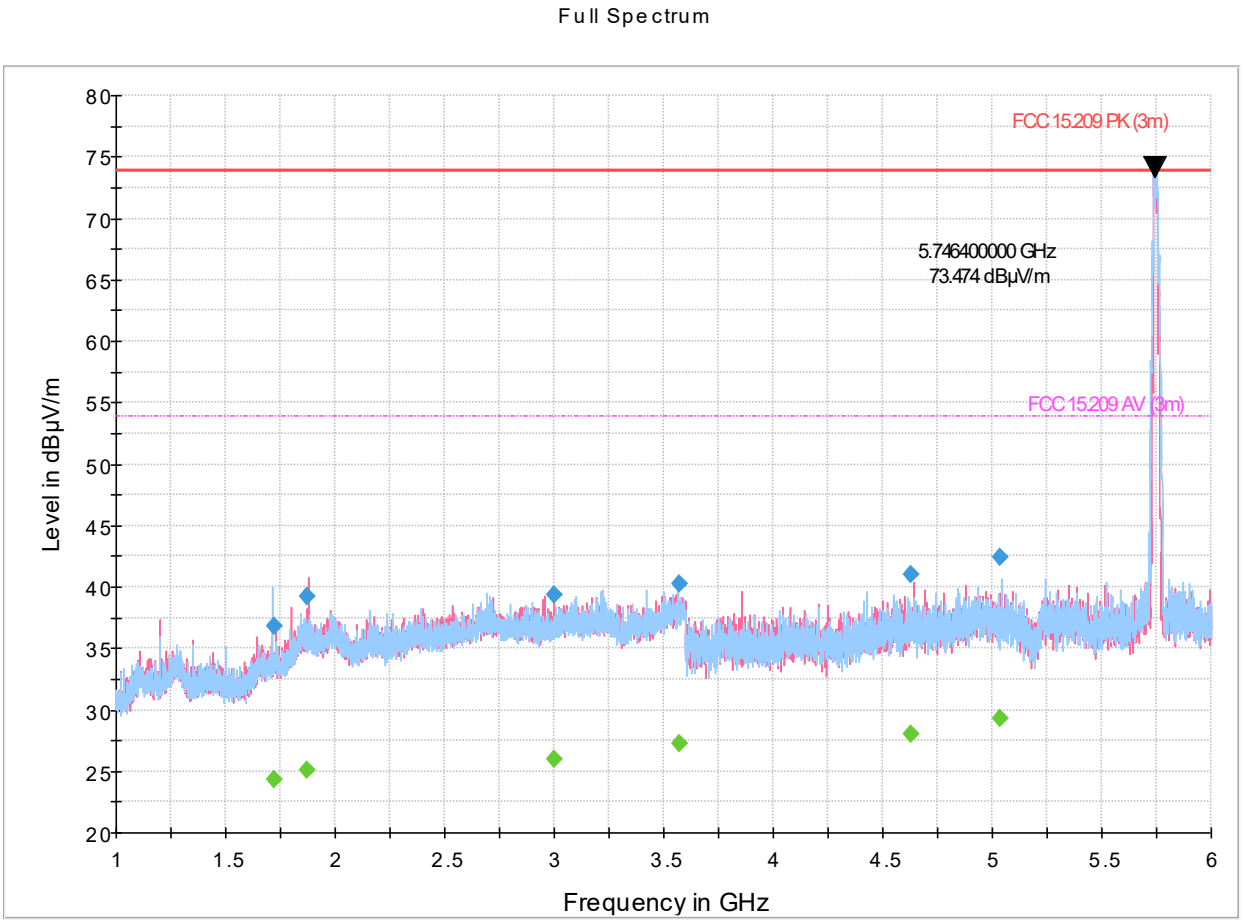
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-19: *Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 30-1000 MHz spectral plot (5745 MHz)*

Table 8.2-20: *Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 30-1000 MHz (Quasi-Peak) results (5745 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.820000	29.82	40.00	10.18	5000.0	120.000	107.0	V	179.0	26.2
31.090333	28.75	40.00	11.25	5000.0	120.000	100.0	V	83.0	26.0
31.191667	29.91	40.00	10.09	5000.0	120.000	100.0	V	0.0	26.0
31.817000	29.23	40.00	10.77	5000.0	120.000	112.0	V	162.0	25.6
43.512333	28.79	40.00	11.21	5000.0	120.000	100.0	V	0.0	19.3
43.669667	28.00	40.00	12.00	5000.0	120.000	118.0	V	0.0	19.2

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



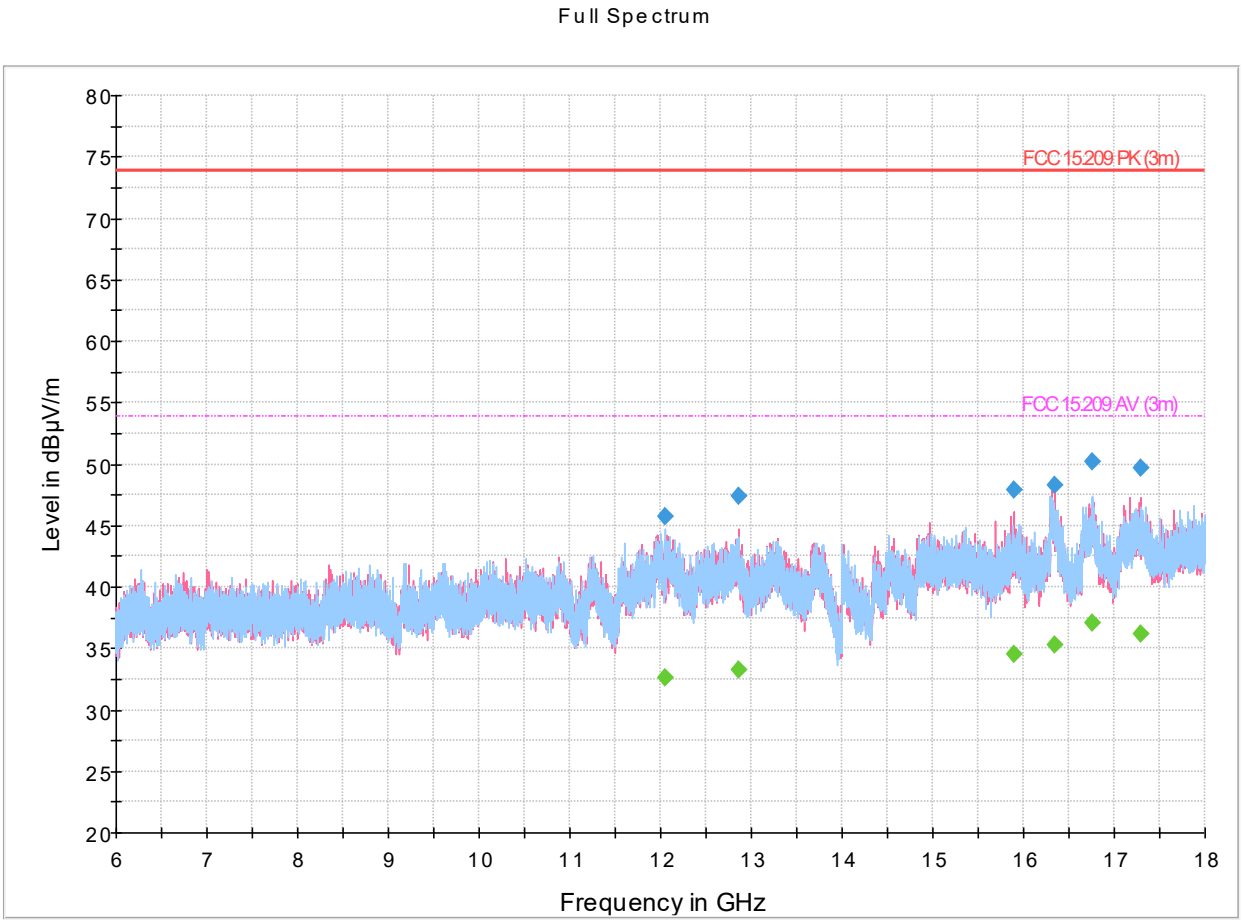
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-20**: Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 1-6 GHz spectral plot (5745 MHz)*

***Table 8.2-21:** Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 1-6 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1718.133333	---	24.29	53.90	29.61	5000.0	1000.000	115.0	H	289.0	-13.0
1718.133333	36.83	---	73.90	37.07	5000.0	1000.000	115.0	H	289.0	-13.0
1873.433333	---	25.12	53.90	28.78	5000.0	1000.000	390.0	V	211.0	-10.8
1873.433333	39.28	---	73.90	34.62	5000.0	1000.000	390.0	V	211.0	-10.8
3001.700000	---	25.94	53.90	27.96	5000.0	1000.000	159.0	V	22.0	-8.1
3001.700000	39.32	---	73.90	34.58	5000.0	1000.000	159.0	V	22.0	-8.1
3567.966667	---	27.21	53.90	26.69	5000.0	1000.000	143.0	H	347.0	-5.9
3567.966667	40.28	---	73.90	33.62	5000.0	1000.000	143.0	H	347.0	-5.9
4630.266667	40.99	---	73.90	32.91	5000.0	1000.000	104.0	V	224.0	-1.9
4630.266667	---	28.02	53.90	25.88	5000.0	1000.000	104.0	V	224.0	-1.9
5034.266667	42.41	---	73.90	31.49	5000.0	1000.000	234.0	H	263.0	-2.4
5034.266667	---	29.34	53.90	24.56	5000.0	1000.000	234.0	H	263.0	-2.4

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
The marked emission at 5746 MHz is the fundamental emission and is excluded from evaluation against the limits.



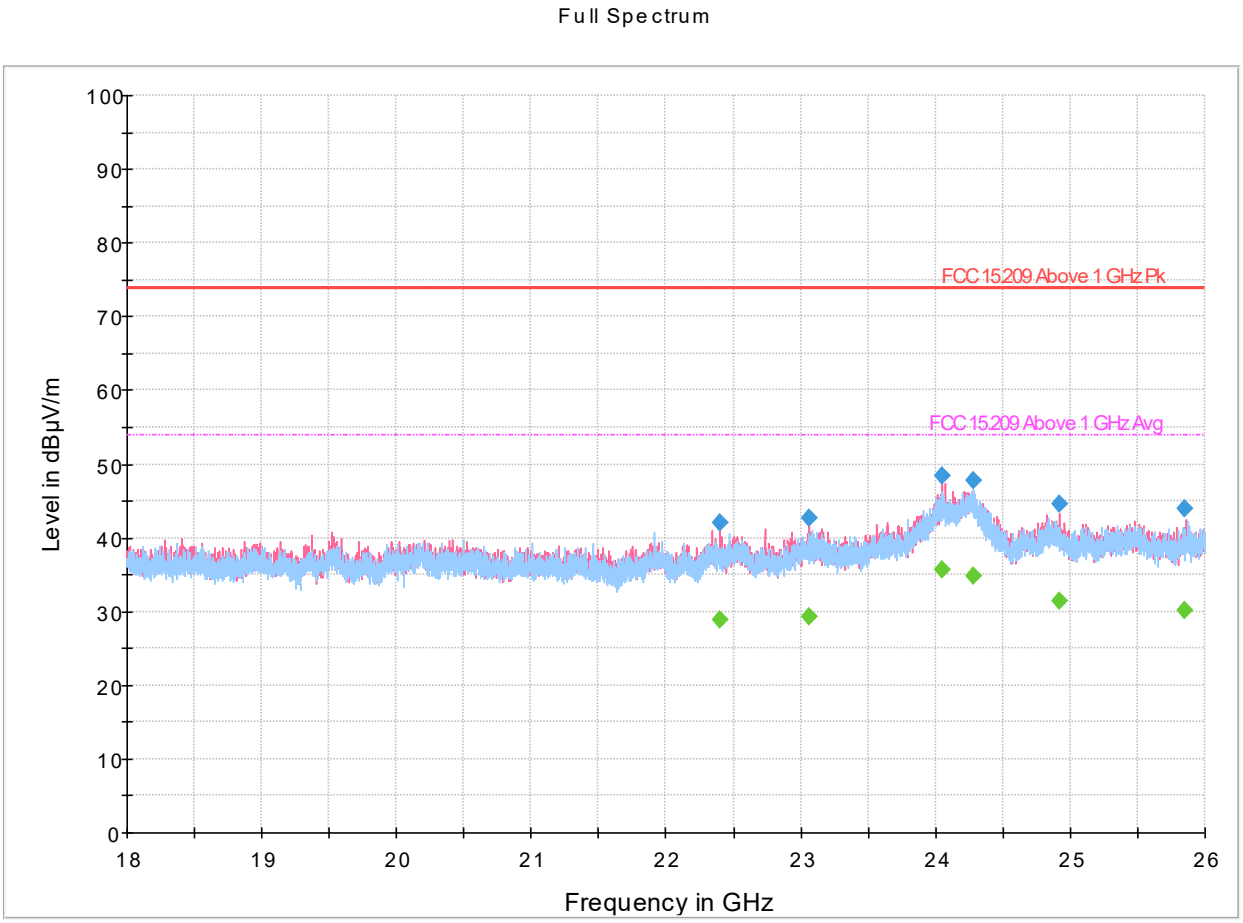
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-21**: Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 6-18 GHz spectral plot (5745 MHz)*

***Table 8.2-22:** Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 6-18 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
12054.766667	---	32.61	53.90	21.29	5000.0	1000.000	336.0	H	172.0	6.4
12054.766667	45.75	---	73.90	28.15	5000.0	1000.000	336.0	H	172.0	6.4
12861.066667	47.40	---	73.90	26.50	5000.0	1000.000	132.0	V	35.0	8.7
12861.066667	---	33.24	53.90	20.66	5000.0	1000.000	132.0	V	35.0	8.7
15894.866667	47.91	---	73.90	25.99	5000.0	1000.000	330.0	V	133.0	11.4
15894.866667	---	34.54	53.90	19.36	5000.0	1000.000	330.0	V	133.0	11.4
16349.166667	---	35.34	53.90	18.56	5000.0	1000.000	123.0	V	0.0	13.1
16349.166667	48.31	---	73.90	25.59	5000.0	1000.000	123.0	V	0.0	13.1
16760.666667	---	37.08	53.90	16.82	5000.0	1000.000	131.0	H	0.0	14.8
16760.666667	50.15	---	73.90	23.75	5000.0	1000.000	131.0	H	0.0	14.8
17294.166667	---	36.12	53.90	17.78	5000.0	1000.000	322.0	V	292.0	14.9
17294.166667	49.71	---	73.90	24.19	5000.0	1000.000	322.0	V	292.0	14.9

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



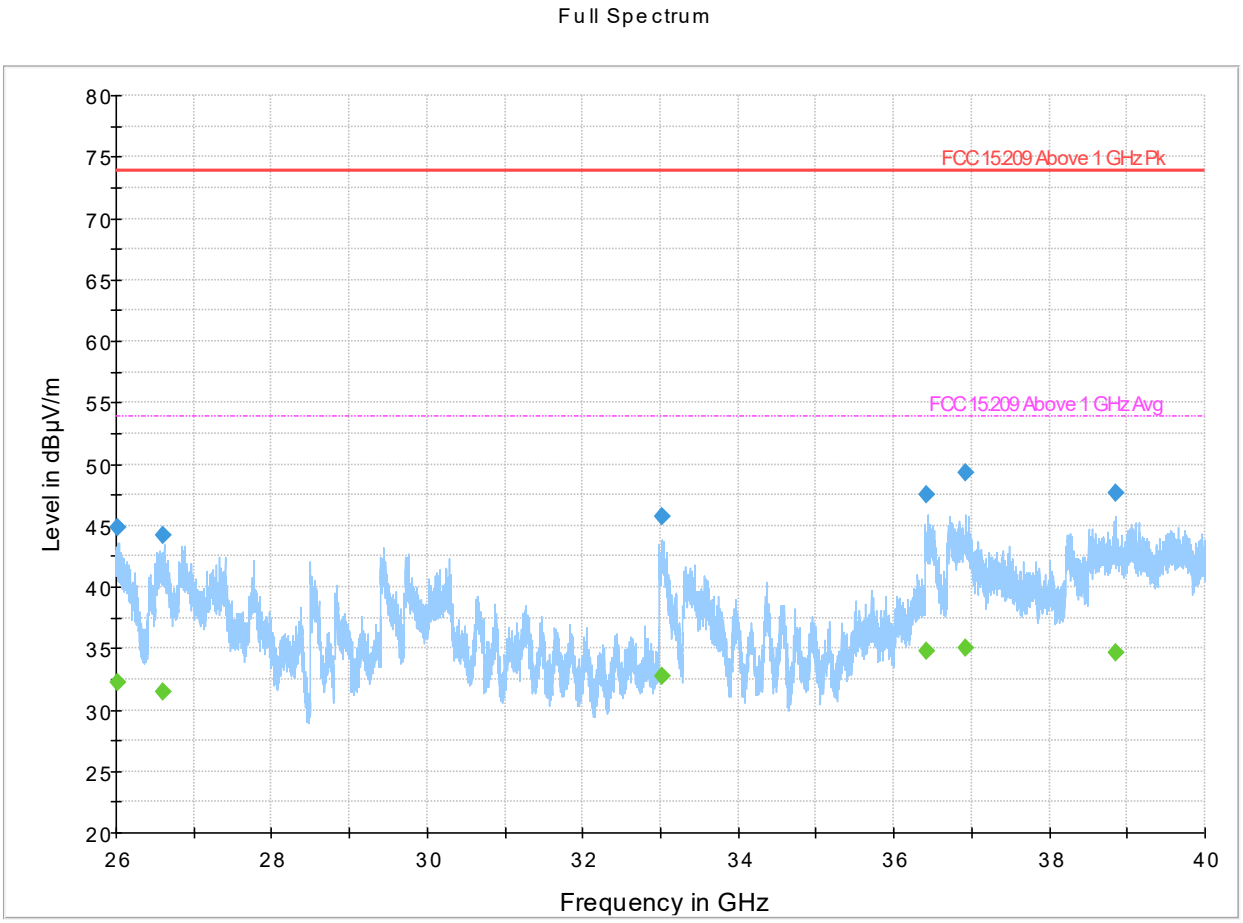
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-22**: Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 18-26 GHz spectral plot (5745 MHz)*

***Table 8.2-23:** Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 18-26 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
22400.900000	42.13	---	73.90	31.77	5000.0	1000.000	141.0	V	138.0	2.3
22400.900000	---	28.95	53.90	24.95	5000.0	1000.000	141.0	V	138.0	2.3
23065.500000	42.73	---	73.90	31.17	5000.0	1000.000	102.0	V	210.0	3.1
23065.500000	---	29.40	53.90	24.50	5000.0	1000.000	102.0	V	210.0	3.1
24051.500000	---	35.75	53.90	18.15	5000.0	1000.000	141.0	V	276.0	9.2
24051.500000	48.50	---	73.90	25.40	5000.0	1000.000	141.0	V	276.0	9.2
24283.900000	---	34.87	53.90	19.03	5000.0	1000.000	98.0	H	154.0	9.0
24283.900000	47.73	---	73.90	26.17	5000.0	1000.000	98.0	H	154.0	9.0
24915.900000	44.48	---	73.90	29.42	5000.0	1000.000	143.0	V	343.0	4.9
24915.900000	---	31.46	53.90	22.44	5000.0	1000.000	143.0	V	343.0	4.9
25853.500000	43.86	---	73.90	30.04	5000.0	1000.000	171.0	V	90.0	4.5
25853.500000	---	30.23	53.90	23.67	5000.0	1000.000	171.0	V	90.0	4.5

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



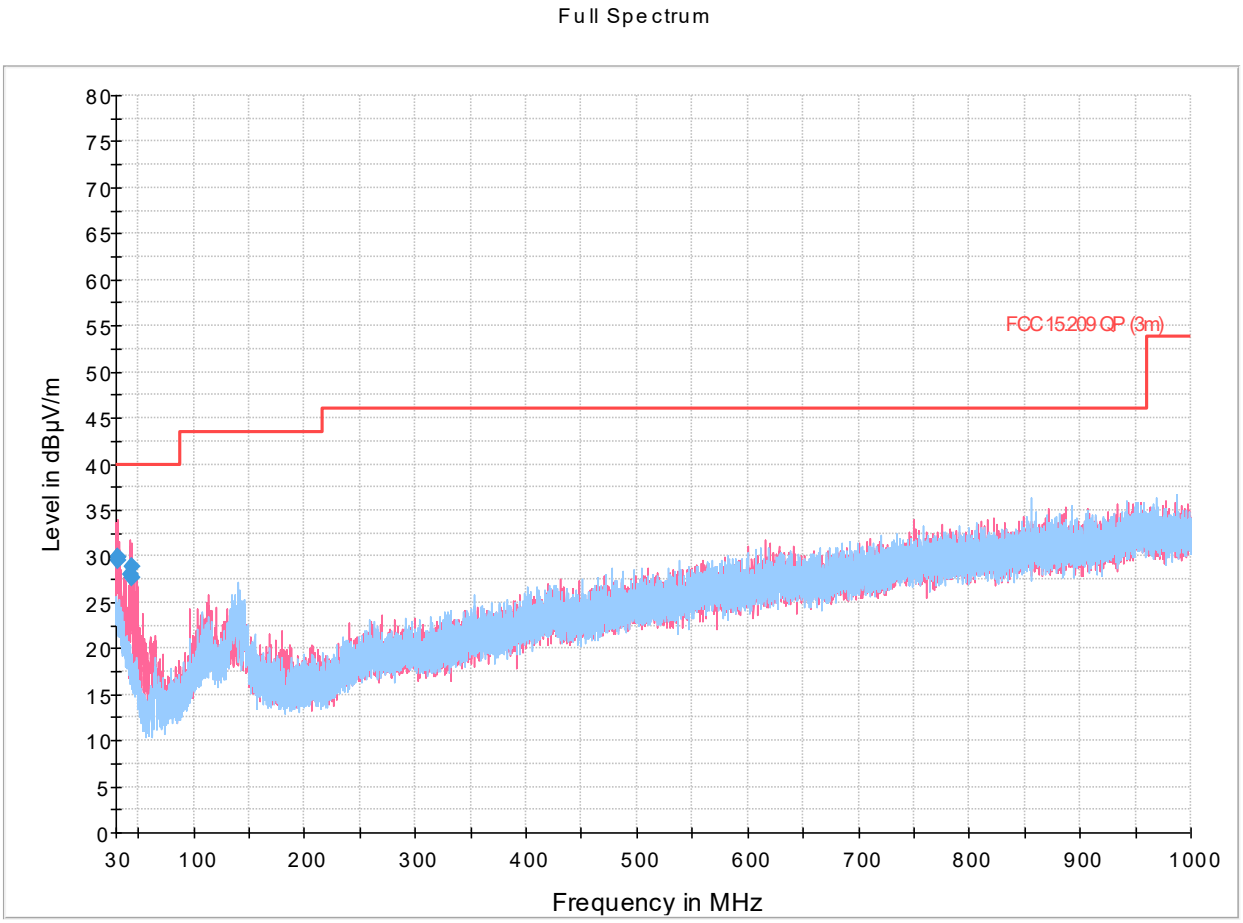
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-23**: Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 26-40 GHz spectral plot (5745 MHz)*

***Table 8.2-24:** Radiated spurious emissions, 802.11ac, 20 MHz, MSC0, 26-40 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
26021.325000	---	32.19	53.90	21.71	1000.0	1000.000	180.0	V	317.0	6.2
26021.325000	44.84	---	73.90	29.06	1000.0	1000.000	180.0	V	317.0	6.2
26606.925000	44.22	---	73.90	29.68	1000.0	1000.000	125.0	H	90.0	6.6
26606.925000	---	31.48	53.90	22.42	1000.0	1000.000	125.0	H	90.0	6.6
33018.000000	---	32.76	53.90	21.14	1000.0	1000.000	106.0	H	199.0	11.9
33018.000000	45.67	---	73.90	28.23	1000.0	1000.000	106.0	H	199.0	11.9
36425.625000	---	34.76	53.90	19.14	1000.0	1000.000	175.0	V	272.0	13.9
36425.625000	47.56	---	73.90	26.34	1000.0	1000.000	175.0	V	272.0	13.9
36924.950000	49.26	---	73.90	24.64	1000.0	1000.000	202.0	V	0.0	14.5
36924.950000	---	35.03	53.90	18.87	1000.0	1000.000	202.0	V	0.0	14.5
38858.775000	---	34.62	53.90	19.28	1000.0	1000.000	117.0	H	79.0	15.8
38858.775000	47.66	---	73.90	26.24	1000.0	1000.000	117.0	H	79.0	15.8

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



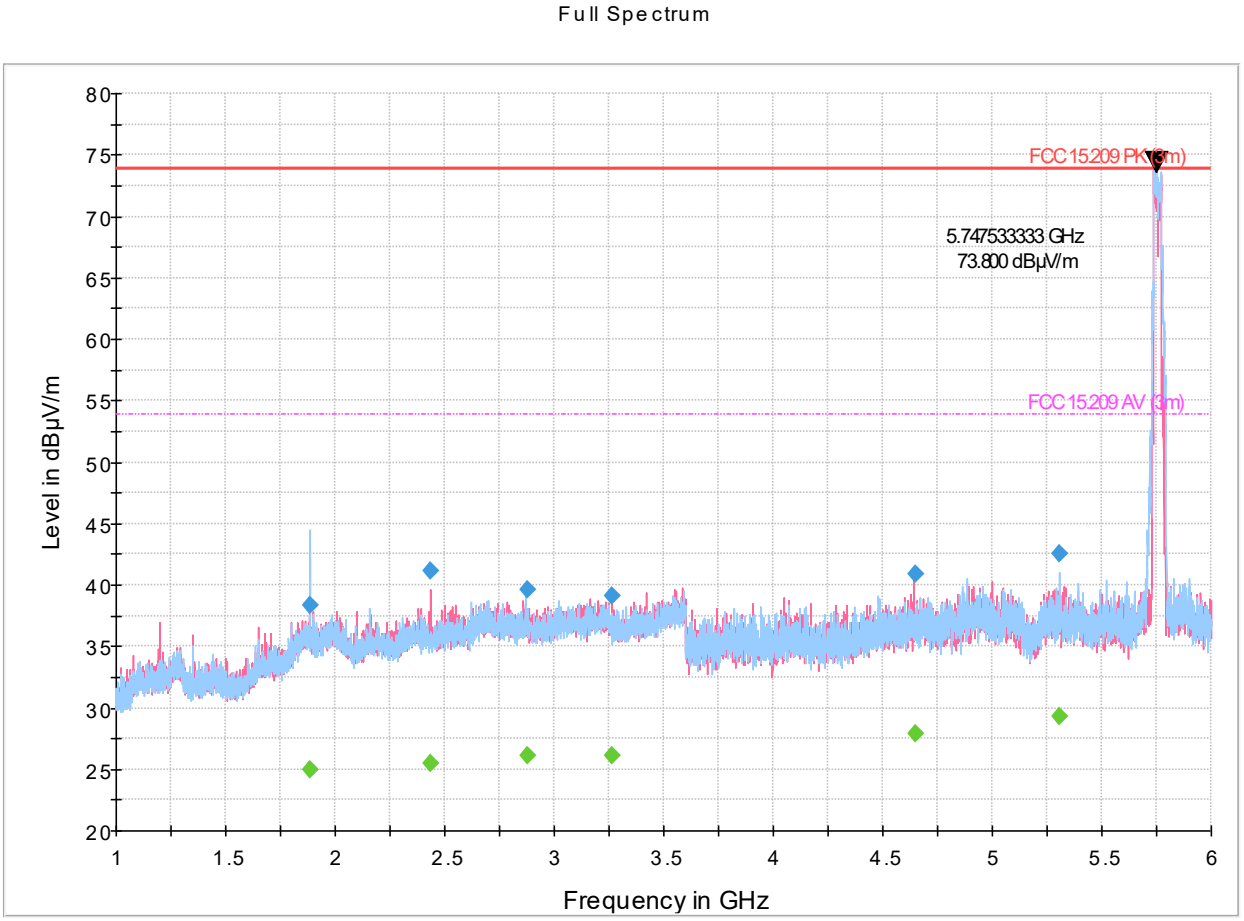
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-24: *Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 30-1000 MHz spectral plot (5745 MHz)*

Table 8.2-25: *Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 30-1000 MHz (Quasi-Peak) results (5745 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.780000	29.93	40.00	10.07	5000.0	120.000	100.0	V	0.0	26.2
30.820000	29.95	40.00	10.05	5000.0	120.000	104.0	V	183.0	26.2
31.762667	29.59	40.00	10.41	5000.0	120.000	103.0	V	0.0	25.6
43.135333	28.03	40.00	11.97	5000.0	120.000	115.0	V	0.0	19.5
43.635000	28.94	40.00	11.06	5000.0	120.000	100.0	V	0.0	19.2
43.646667	27.69	40.00	12.31	5000.0	120.000	114.0	V	316.0	19.2

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



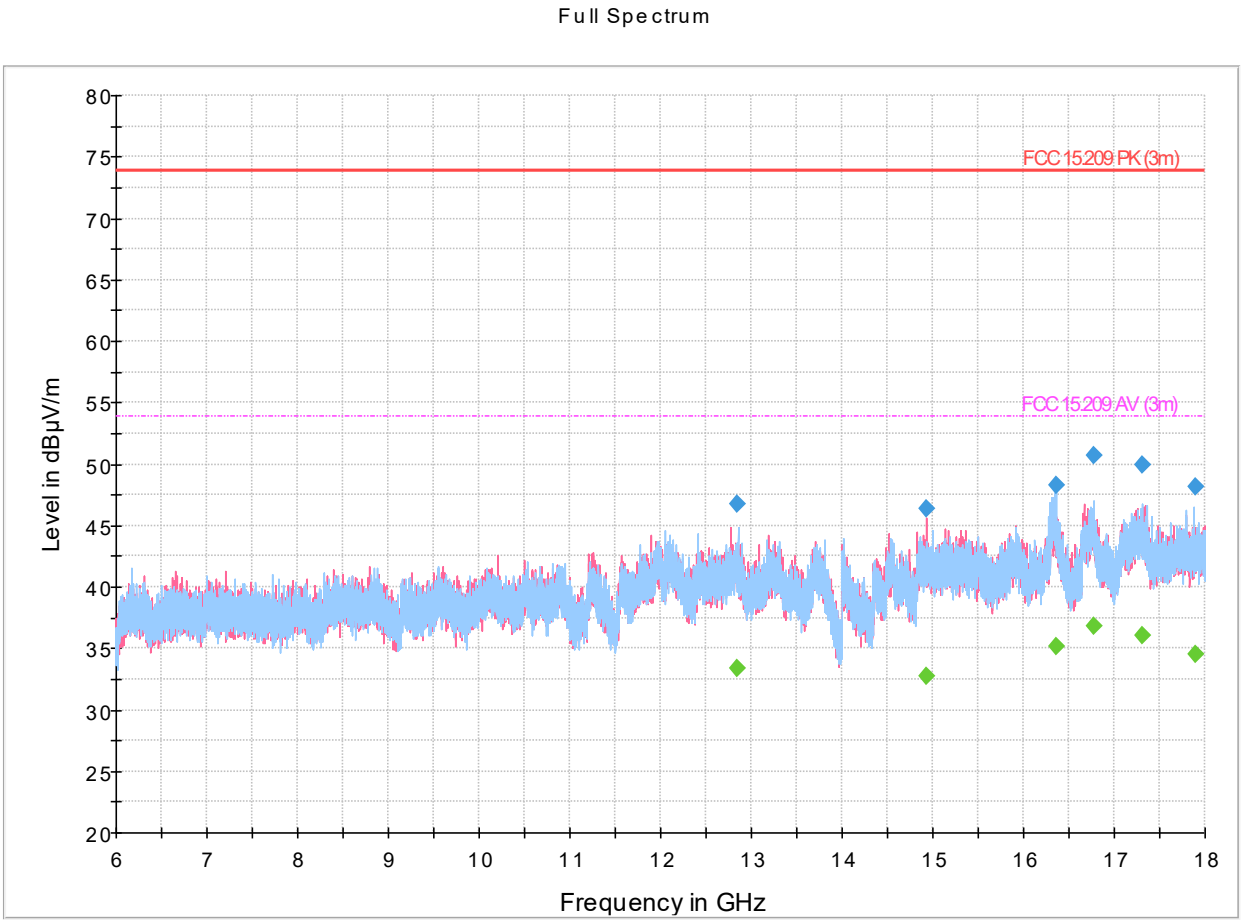
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-25**: Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 1-6 GHz spectral plot (5745 MHz)*

***Table 8.2-26:** Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 1-6 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1886.733333	38.32	---	73.90	35.58	5000.0	1000.000	346.0	H	0.0	-10.8
1886.733333	---	24.98	53.90	28.92	5000.0	1000.000	346.0	H	0.0	-10.8
2437.466667	41.09	---	73.90	32.81	5000.0	1000.000	202.0	V	325.0	-9.8
2437.466667	---	25.47	53.90	28.43	5000.0	1000.000	202.0	V	325.0	-9.8
2876.700000	39.58	---	73.90	34.32	5000.0	1000.000	294.0	H	47.0	-8.4
2876.700000	---	26.14	53.90	27.76	5000.0	1000.000	294.0	H	47.0	-8.4
3262.266667	39.07	---	73.90	34.83	5000.0	1000.000	353.0	V	0.0	-7.0
3262.266667	---	26.05	53.90	27.85	5000.0	1000.000	353.0	V	0.0	-7.0
4647.900000	40.86	---	73.90	33.04	5000.0	1000.000	389.0	V	105.0	-1.9
4647.900000	---	27.92	53.90	25.98	5000.0	1000.000	389.0	V	105.0	-1.9
5309.266667	42.52	---	73.90	31.38	5000.0	1000.000	241.0	H	11.0	-2.0
5309.266667	---	29.34	53.90	24.56	5000.0	1000.000	241.0	H	11.0	-2.0

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
The marked emission at 5747 MHz is the fundamental emission and is excluded from evaluation against the limits



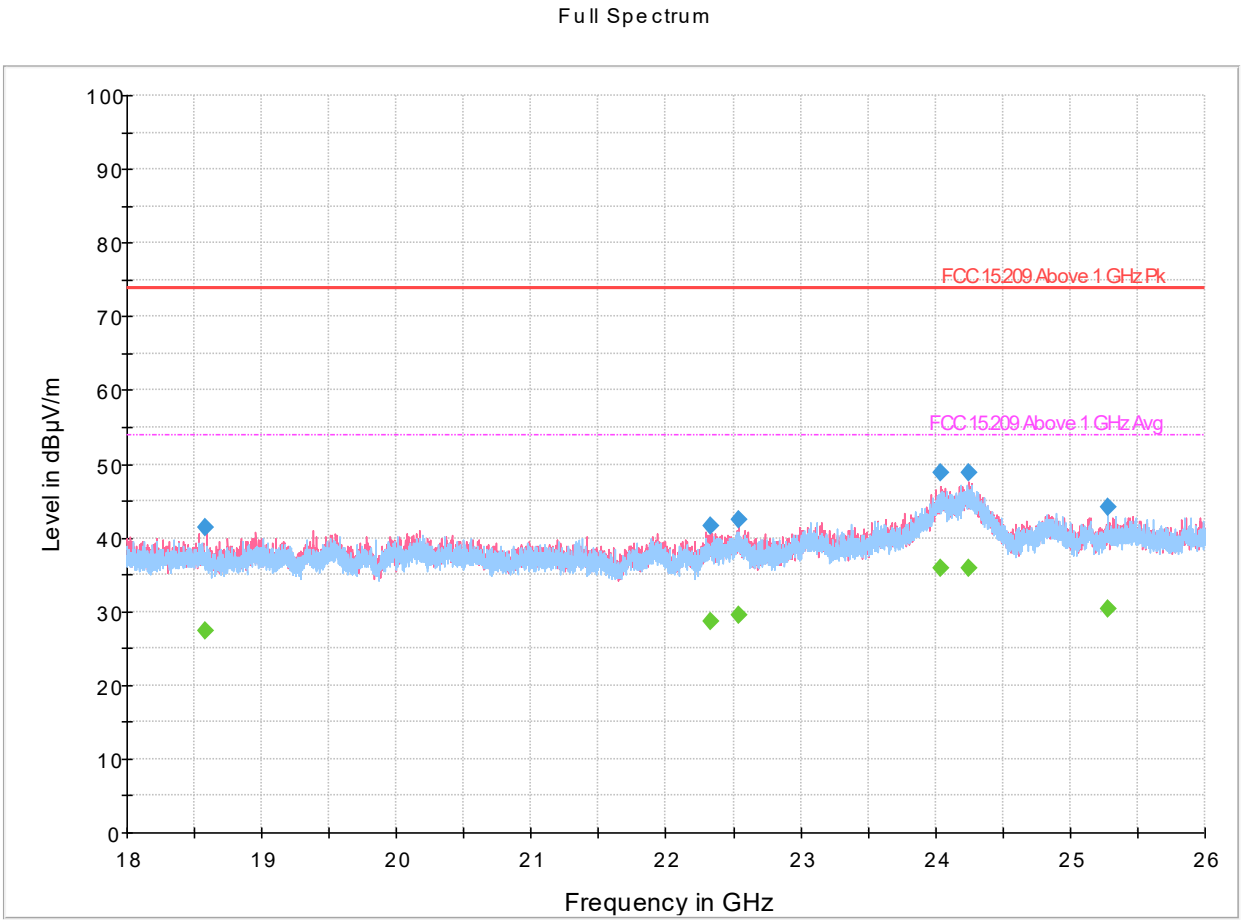
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-26**: Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 6-18 GHz spectral plot (5745 MHz)*

***Table 8.2-27:** Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 6-18 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
12851.700000	---	33.33	53.90	20.57	5000.0	1000.000	243.0	H	116.0	8.7
12851.700000	46.76	---	73.90	27.15	5000.0	1000.000	243.0	H	116.0	8.7
14929.133333	---	32.77	53.90	21.13	5000.0	1000.000	300.0	V	310.0	10.4
14929.133333	46.40	---	73.90	27.50	5000.0	1000.000	300.0	V	310.0	10.4
16354.000000	---	35.22	53.90	18.68	5000.0	1000.000	238.0	H	0.0	13.1
16354.000000	48.32	---	73.90	25.58	5000.0	1000.000	238.0	H	0.0	13.1
16776.166667	50.67	---	73.90	23.23	5000.0	1000.000	334.0	H	253.0	14.6
16776.166667	---	36.76	53.90	17.14	5000.0	1000.000	334.0	H	253.0	14.6
17311.100000	49.93	---	73.90	23.97	5000.0	1000.000	303.0	H	80.0	14.7
17311.100000	---	36.00	53.90	17.90	5000.0	1000.000	303.0	H	80.0	14.7
17888.966667	---	34.57	53.90	19.33	5000.0	1000.000	104.0	H	169.0	15.1
17888.966667	48.12	---	73.90	25.78	5000.0	1000.000	104.0	H	169.0	15.1

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



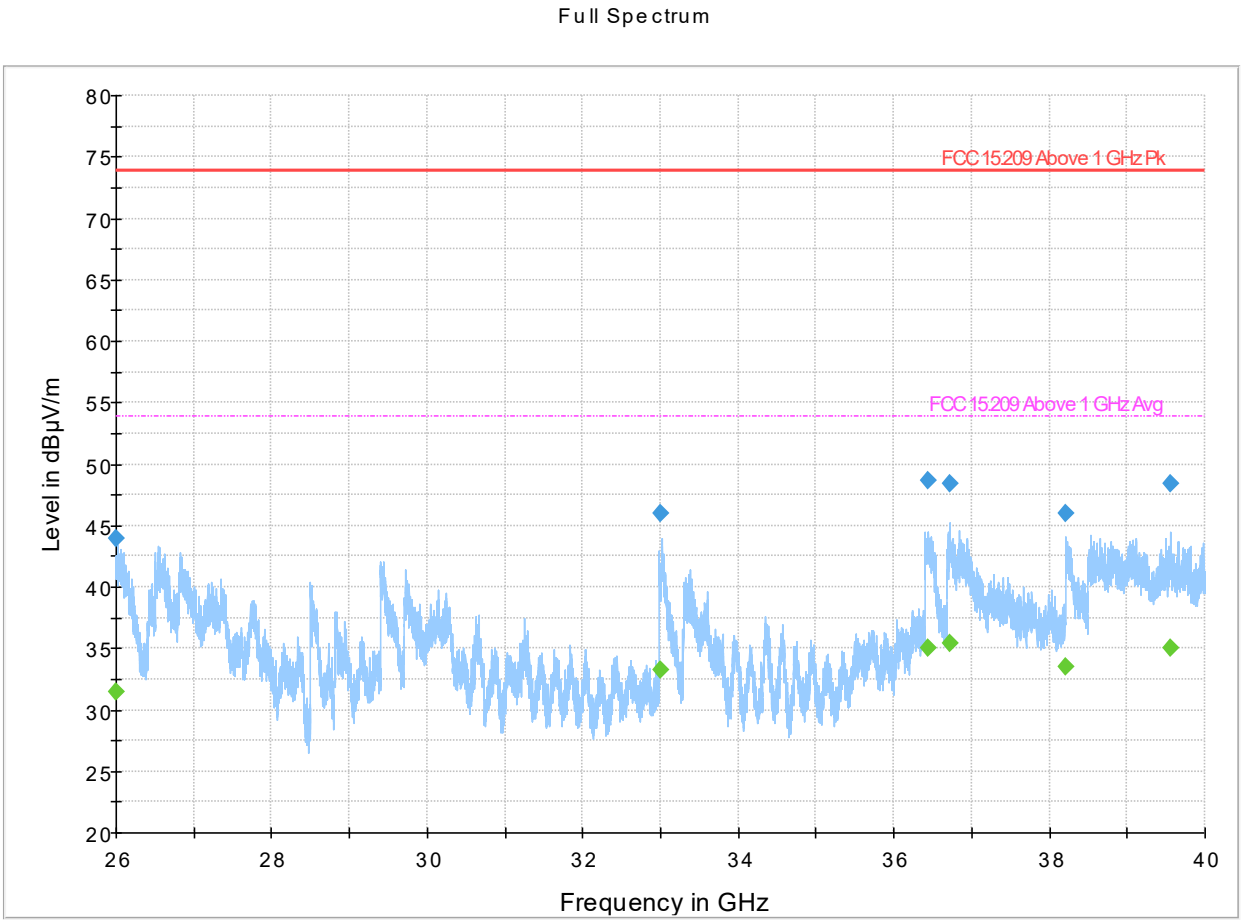
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-27**: Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 18-26 GHz spectral plot (5745 MHz)*

***Table 8.2-28:** Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 18-26 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18584.700000	41.33	---	73.90	32.57	5000.0	1000.000	159.0	V	146.0	2.5
18584.700000	---	27.46	53.90	26.44	5000.0	1000.000	159.0	V	146.0	2.5
22327.500000	41.70	---	73.90	32.20	5000.0	1000.000	120.0	V	106.0	2.3
22327.500000	---	28.57	53.90	25.33	5000.0	1000.000	120.0	V	106.0	2.3
22543.100000	42.46	---	73.90	31.44	5000.0	1000.000	119.0	V	100.0	2.6
22543.100000	---	29.58	53.90	24.32	5000.0	1000.000	119.0	V	100.0	2.6
24036.700000	48.91	---	73.90	24.99	5000.0	1000.000	156.0	V	209.0	9.2
24036.700000	---	35.84	53.90	18.06	5000.0	1000.000	156.0	V	209.0	9.2
24244.700000	48.85	---	73.90	25.05	5000.0	1000.000	175.0	V	82.0	9.4
24244.700000	---	35.86	53.90	18.04	5000.0	1000.000	175.0	V	82.0	9.4
25285.500000	44.08	---	73.90	29.82	5000.0	1000.000	98.0	H	84.0	4.2
25285.500000	---	30.44	53.90	23.46	5000.0	1000.000	98.0	H	84.0	4.2

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



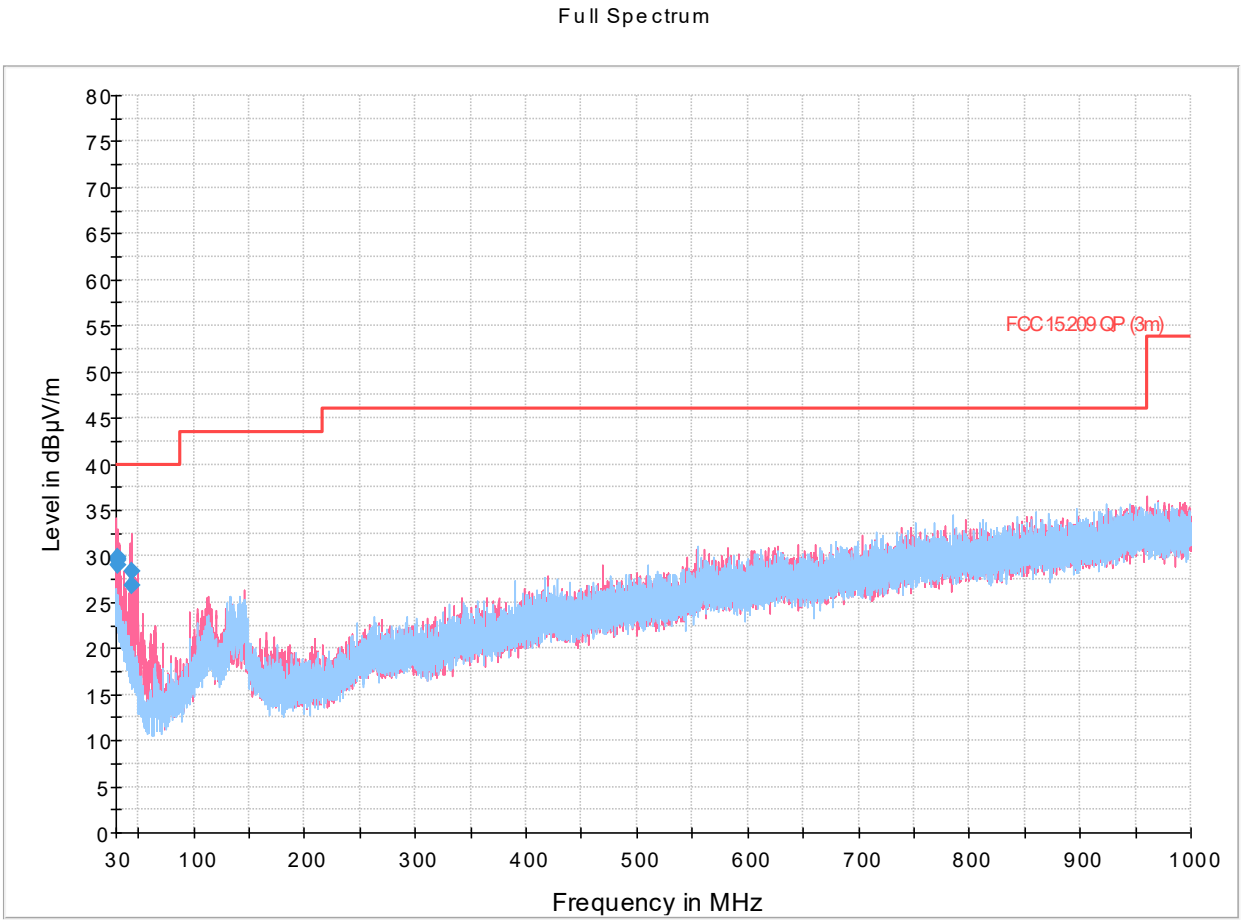
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-28**: Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 26-40 GHz spectral plot (5745 MHz)*

***Table 8.2-29:** Radiated spurious emissions, 802.11ac, 40 MHz, MSC0, 26-40 GHz results (5745 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
26004.800000	---	31.49	53.90	22.41	1000.0	1000.000	128.0	V	59.0	6.3
26004.800000	43.97	---	73.90	29.93	1000.0	1000.000	128.0	V	59.0	6.3
33008.925000	46.03	---	73.90	27.87	1000.0	1000.000	117.0	V	134.0	11.9
33008.925000	---	33.31	53.90	20.59	1000.0	1000.000	117.0	V	134.0	11.9
36433.350000	48.61	---	73.90	25.29	1000.0	1000.000	225.0	V	305.0	13.9
36433.350000	---	35.04	53.90	18.86	1000.0	1000.000	225.0	V	305.0	13.9
36725.200000	---	35.46	53.90	18.44	1000.0	1000.000	215.0	V	199.0	14.4
36725.200000	48.45	---	73.90	25.45	1000.0	1000.000	215.0	V	199.0	14.4
38217.175000	45.93	---	73.90	27.97	1000.0	1000.000	147.0	V	21.0	14.6
38217.175000	---	33.49	53.90	20.41	1000.0	1000.000	147.0	V	21.0	14.6
39553.800000	48.39	---	73.90	25.51	1000.0	1000.000	199.0	V	198.0	16.1
39553.800000	---	35.04	53.90	18.86	1000.0	1000.000	199.0	V	198.0	16.1

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



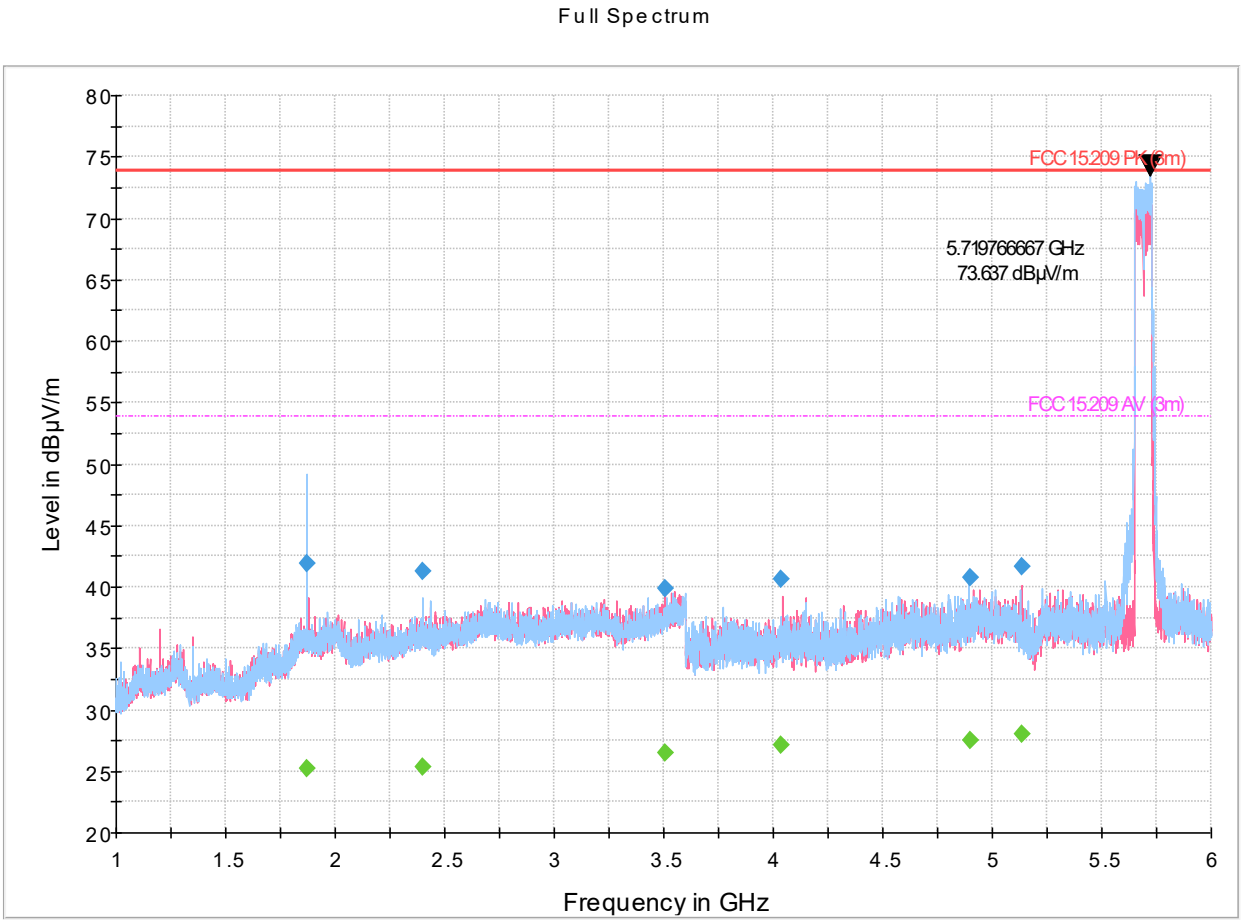
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

Figure 8.2-29: *Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 30-1000 MHz spectral plot (5720 MHz)*

Table 8.2-30: *Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 30-1000 MHz (Quasi-Peak) results (5720 MHz)*

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.754333	29.79	40.00	10.21	5000.0	120.000	103.0	V	176.0	26.2
31.236667	29.54	40.00	10.46	5000.0	120.000	104.0	V	0.0	25.9
31.338000	29.96	40.00	10.04	5000.0	120.000	103.0	V	192.0	25.9
31.784667	29.02	40.00	10.98	5000.0	120.000	103.0	V	229.0	25.6
43.517333	26.81	40.00	13.19	5000.0	120.000	103.0	V	56.0	19.3
43.798333	28.35	40.00	11.65	5000.0	120.000	110.0	V	0.0	19.1

Notes:
[1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factor = antenna factor ACF (dB) + cable loss (dB)
[3] The maximum measured value observed over a period of 5 seconds was recorded.
[4] Limits converted to dBµV/m and an inverse proportionality factor of 20 dB per decade has been used to normalize the specification limit to a measurement distance of 3 meters to determine compliance.



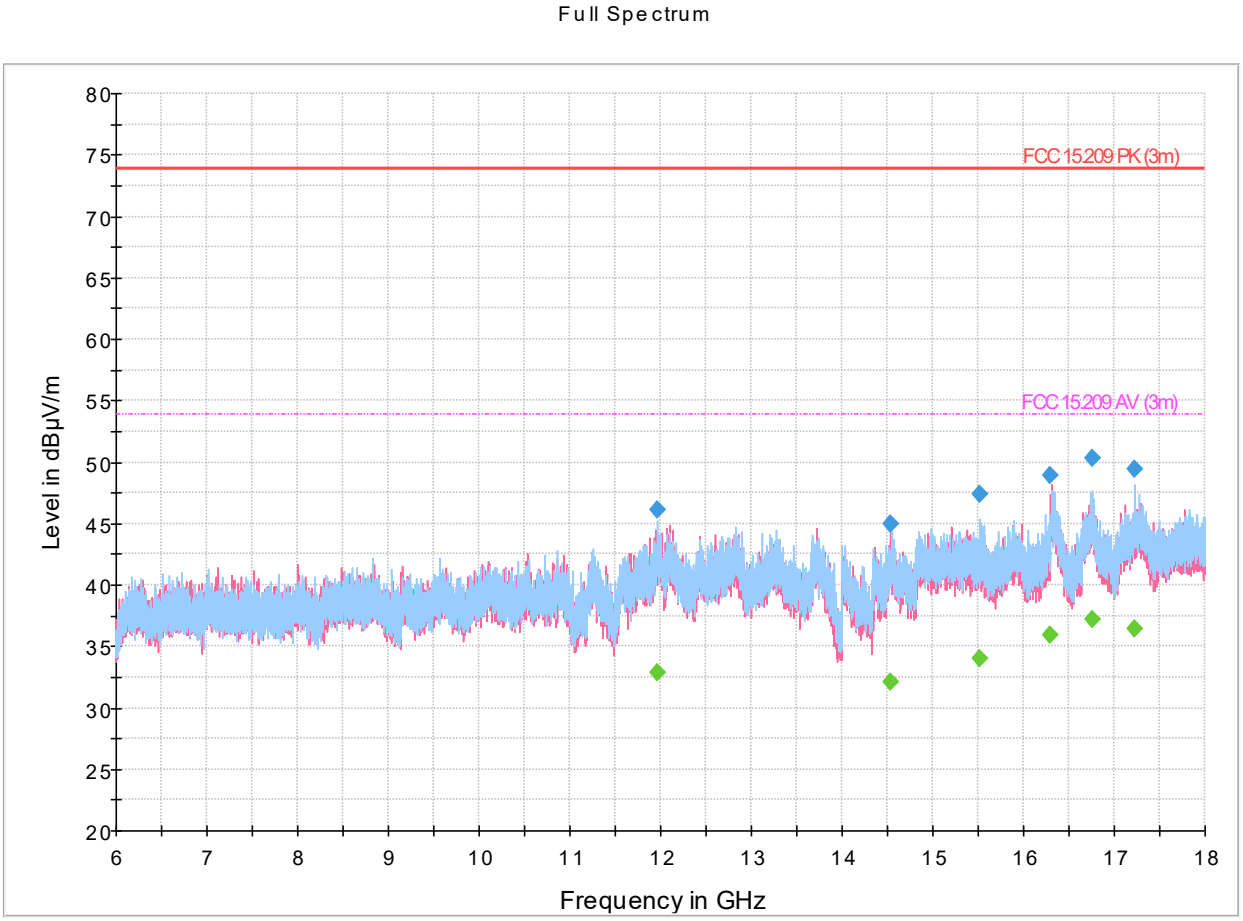
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-30**: Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 1-6 GHz spectral plot (5720 MHz)*

***Table 8.2-31:** Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 1-6 GHz results (5720 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1874.833333	41.95	---	73.90	31.95	5000.0	1000.000	134.0	H	235.0	-10.8
1874.833333	---	25.25	53.90	28.65	5000.0	1000.000	134.0	H	235.0	-10.8
2401.933333	---	25.37	53.90	28.53	5000.0	1000.000	298.0	H	329.0	-10.0
2401.933333	41.30	---	73.90	32.60	5000.0	1000.000	298.0	H	329.0	-10.0
3506.500000	39.85	---	73.90	34.05	5000.0	1000.000	255.0	V	296.0	-6.3
3506.500000	---	26.50	53.90	27.40	5000.0	1000.000	255.0	V	296.0	-6.3
4038.833333	---	27.17	53.90	26.73	5000.0	1000.000	339.0	V	140.0	-3.6
4038.833333	40.66	---	73.90	33.24	5000.0	1000.000	339.0	V	140.0	-3.6
4898.300000	40.74	---	73.90	33.16	5000.0	1000.000	373.0	H	198.0	-2.3
4898.300000	---	27.51	53.90	26.39	5000.0	1000.000	373.0	H	198.0	-2.3
5138.300000	41.60	---	73.90	32.31	5000.0	1000.000	131.0	V	289.0	-2.4
5138.300000	---	28.06	53.90	25.84	5000.0	1000.000	131.0	V	289.0	-2.4

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)
The marked emission at 5720 MHz is the fundamental emission and is excluded from evaluation against the limits.



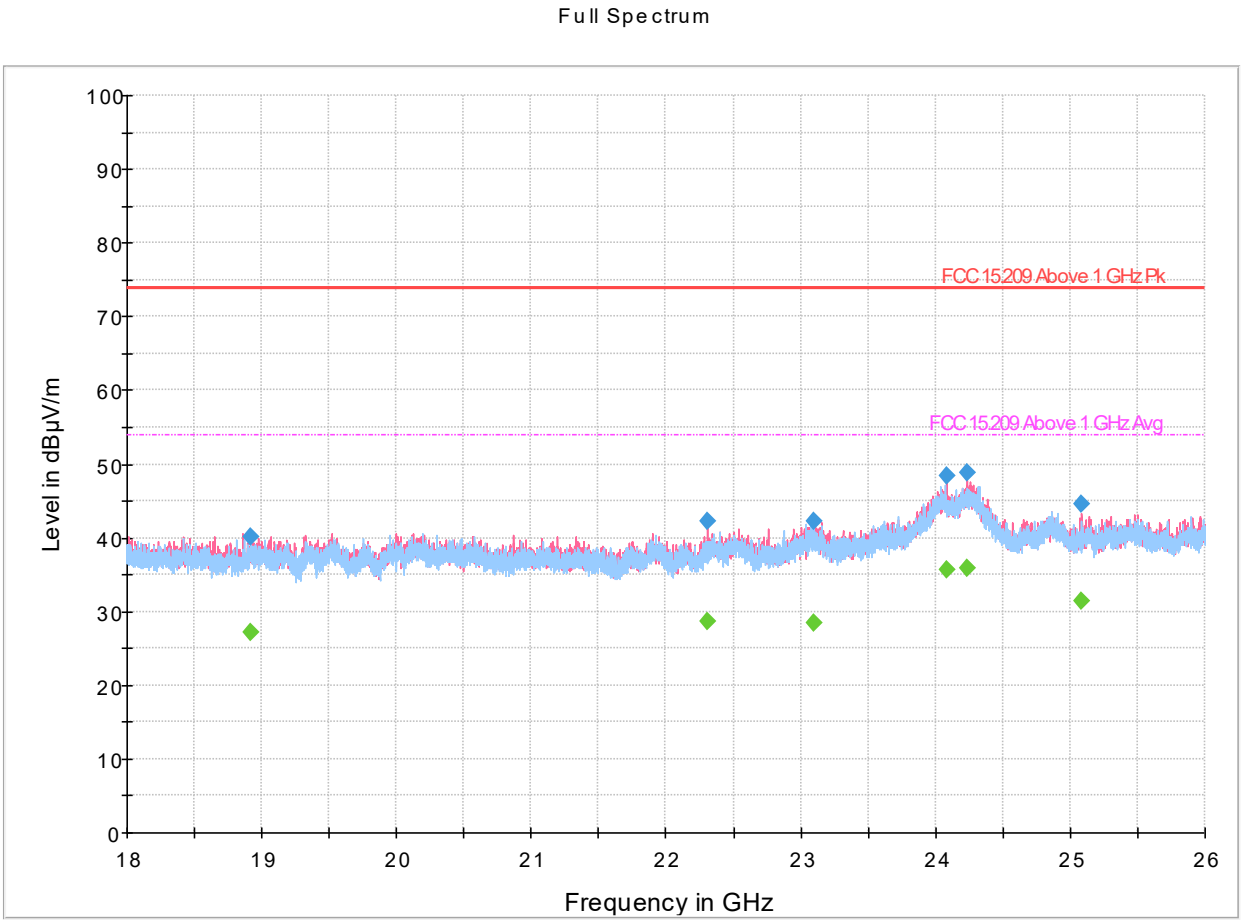
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-31**: Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 6-18 GHz spectral plot (5720 MHz)*

***Table 8.2-32:** Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 6-18 GHz results (5720 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
11966.700000	46.14	---	73.90	27.76	5000.0	1000.000	349.0	H	91.0	6.0
11966.700000	---	32.82	53.90	21.08	5000.0	1000.000	349.0	H	91.0	6.0
14531.133333	---	32.04	53.90	21.86	5000.0	1000.000	192.0	V	94.0	9.5
14531.133333	44.97	---	73.90	28.93	5000.0	1000.000	192.0	V	94.0	9.5
15525.233333	---	33.97	53.90	19.93	5000.0	1000.000	355.0	H	348.0	10.4
15525.233333	47.33	---	73.90	26.57	5000.0	1000.000	355.0	H	348.0	10.4
16299.900000	48.87	---	73.90	25.03	5000.0	1000.000	123.0	V	265.0	13.4
16299.900000	---	35.97	53.90	17.93	5000.0	1000.000	123.0	V	265.0	13.4
16758.200000	50.34	---	73.90	23.56	5000.0	1000.000	164.0	H	197.0	14.8
16758.200000	---	37.16	53.90	16.74	5000.0	1000.000	164.0	H	197.0	14.8
17221.600000	49.46	---	73.90	24.44	5000.0	1000.000	249.0	H	249.0	15.0
17221.600000	---	36.38	53.90	17.52	5000.0	1000.000	249.0	H	249.0	15.0

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



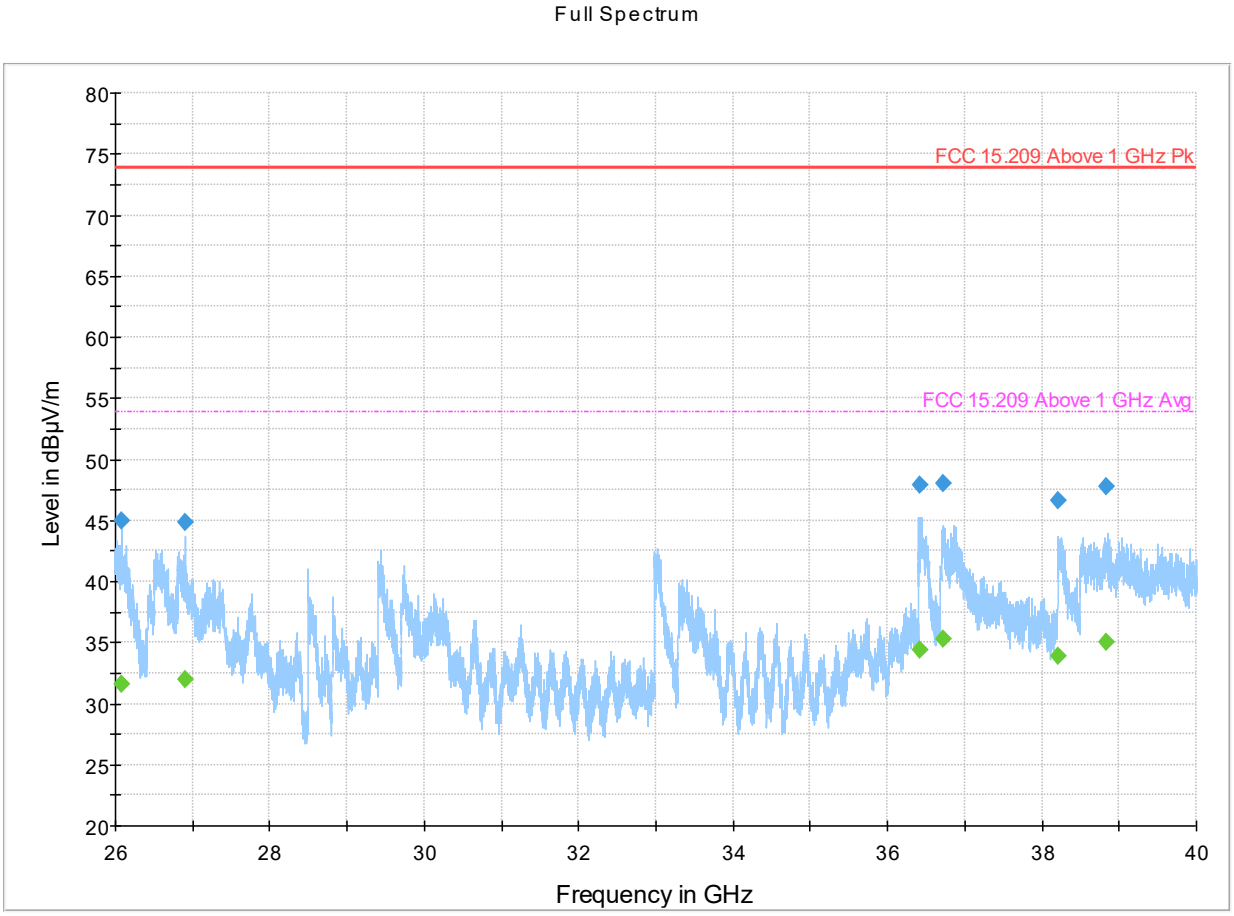
The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-32**: Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 18-26 GHz spectral plot (5720 MHz)*

***Table 8.2-33:** Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 18-26 GHz results (5720 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18917.900000	40.09	---	73.90	33.81	5000.0	1000.000	171.0	V	19.0	2.3
18917.900000	---	27.20	53.90	26.70	5000.0	1000.000	171.0	V	19.0	2.3
22302.700000	42.15	---	73.90	31.75	5000.0	1000.000	147.0	V	300.0	2.3
22302.700000	---	28.66	53.90	25.24	5000.0	1000.000	147.0	V	300.0	2.3
23096.100000	42.16	---	73.90	31.74	5000.0	1000.000	125.0	H	77.0	3.1
23096.100000	---	28.51	53.90	25.39	5000.0	1000.000	125.0	H	77.0	3.1
24081.900000	---	35.76	53.90	18.14	5000.0	1000.000	175.0	V	40.0	9.3
24081.900000	48.43	---	73.90	25.47	5000.0	1000.000	175.0	V	40.0	9.3
24230.300000	48.86	---	73.90	25.04	5000.0	1000.000	111.0	V	301.0	9.4
24230.300000	---	35.82	53.90	18.08	5000.0	1000.000	111.0	V	301.0	9.4
25087.500000	---	31.39	53.90	22.51	5000.0	1000.000	117.0	V	336.0	4.6
25087.500000	44.53	---	73.90	29.37	5000.0	1000.000	117.0	V	336.0	4.6

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)



The spectral plot is a summation of a vertical and horizontal scan. The spectral scan has been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators).

***Figure 8.2-33**: Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 26-40 GHz spectral plot (5720 MHz)*

***Table 8.2-34:** Radiated spurious emissions, 802.11ac, 80 MHz, MSC0, 26-40 GHz results (5720 MHz)*

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
26073.500000	---	31.60	53.90	22.30	1000.0	1000.000	208.0	H	68.0	6.1
26073.500000	45.03	---	73.90	28.87	1000.0	1000.000	208.0	H	68.0	6.1
26897.000000	44.83	---	73.90	29.07	1000.0	1000.000	128.0	V	137.0	6.9
26897.000000	---	31.96	53.90	21.94	1000.0	1000.000	128.0	V	137.0	6.9
36417.100000	---	34.37	53.90	19.53	1000.0	1000.000	134.0	V	164.0	13.9
36417.100000	47.94	---	73.90	25.96	1000.0	1000.000	134.0	V	164.0	13.9
36711.300000	---	35.26	53.90	18.64	1000.0	1000.000	194.0	V	32.0	14.3
36711.300000	48.06	---	73.90	25.84	1000.0	1000.000	194.0	V	32.0	14.3
38212.075000	46.69	---	73.90	27.21	1000.0	1000.000	223.0	V	349.0	14.6
38212.075000	---	33.90	53.90	20.00	1000.0	1000.000	223.0	V	349.0	14.6
38837.925000	---	34.97	53.90	18.93	1000.0	1000.000	225.0	V	185.0	15.7
38837.925000	47.80	---	73.90	26.10	1000.0	1000.000	225.0	V	185.0	15.7

Notes: [1] Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)
[2] Correction factors = antenna factor ACF (dB) + cable loss (dB) – pre-amp (dB)

Section 9 Block diagrams of test set-ups

9.1 Radiated emissions set-up

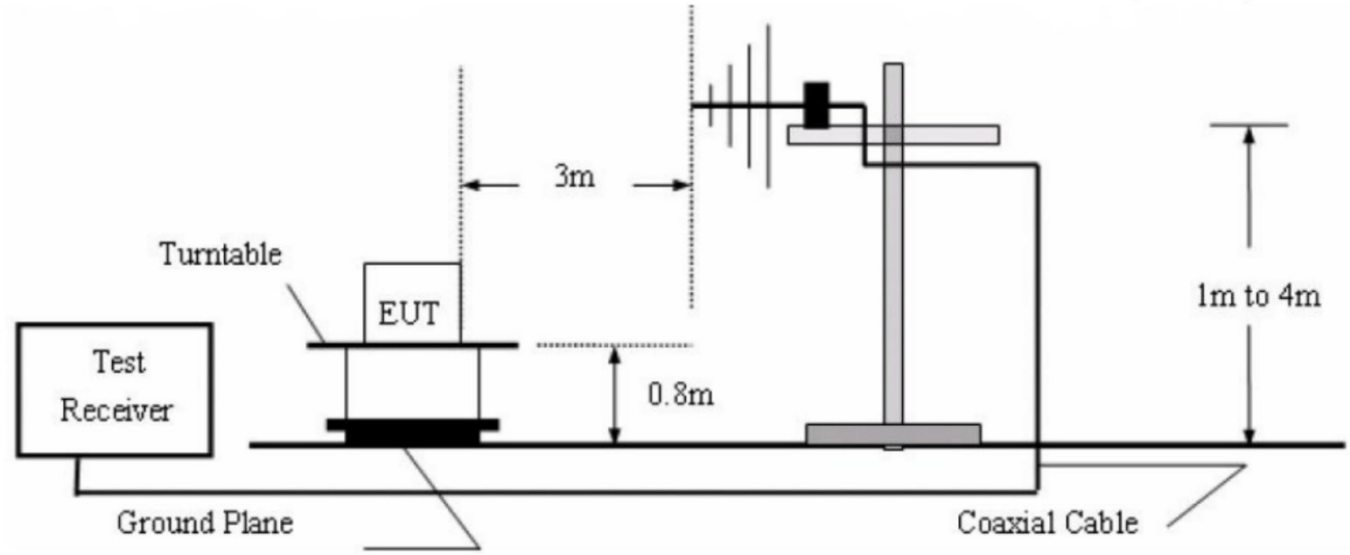


Figure 9.1-1: *30 MHz - 1000 MHz Setup*

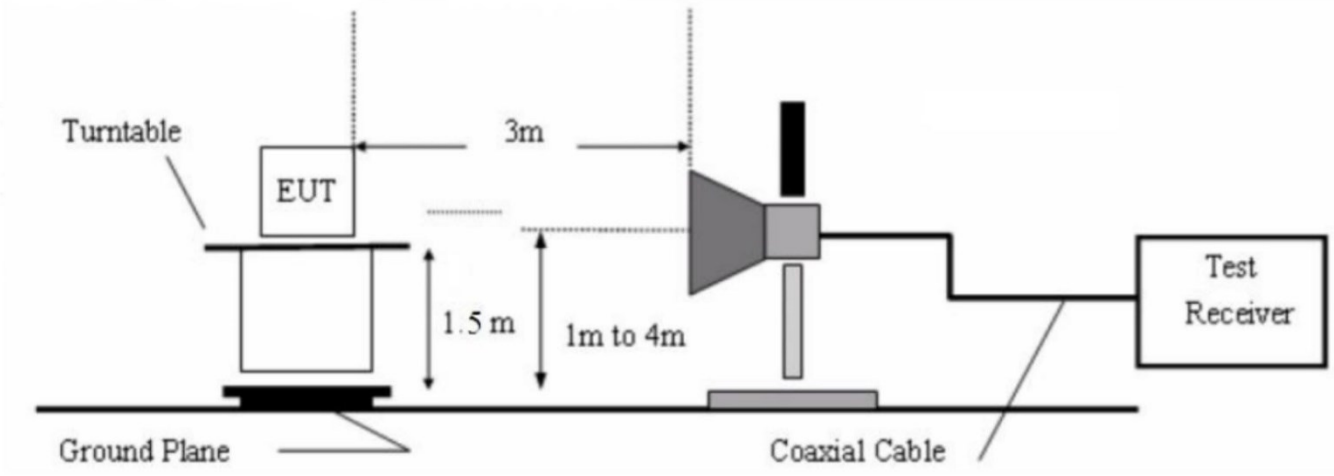


Figure 9.1-2: 1 GHz - 40 GHz Setup